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THE PRINCIPLES OF EDUCATION

BY

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LONGMANS, GREEN AND CO.
55 FIFTH AVENUE, NEW YORK
221 EAST 20TH STREET, CHICAGO

LONGMANS, GREEN AND CO.
215 VICTORIA STREET, TORONTO

TRAINING COLLEGE
MADRAS-14

BIBLIOGRAPHICAL NOTE

First Edition: November, 1904.
Second Edition: January, 1906.
New Impressions: September, 1907; October, 1908; February, 1911.
New Edition: October, 1913. Reprinted September, 1915, and January, 1917.
New Edition: August, 1919.
New Impressions: September, 1920; January, 1922; June, 1924; May, 1927; September, 1930; June, 1933; April, 1935; May, 1937; July, 1939; May, 1942.

Training College,
APETTAH, MADRAS.

CODE NUMBER: 87167.

PRINTED IN INDIA AT THE DIOCESAN PRESS, MADRAS—1942. C. 7649

PREFACE

THE Publishers having informed me that a new impression of this book is called for, I take the opportunity of stating that my later work, first published under the title "Education," and afterwards revised and republished under the more descriptive title "Modern Education: Its Aims and Methods," contains a restatement of certain of the principles here expounded, and also some account of recent developments in educational thought and practice. To the later book the reader is also referred for bibliographical notes, which may enable him to find his way among the very numerous and important contributions to the study of education which have been made during the past few years. In the present work the references have also been advised.

T. RAYMONT.

CARBIS BAY.
CORNWALL,
June, 1939.

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PART I

INTRODUCTORY

THE PRINCIPLES OF EDUCATION

CHAPTER I

THE MEANING OF EDUCATION

"Ask yourselves what is the leading motive which actuates you while you are at work. I do not ask you what your leading motive is for working—that is a different thing; you may have families to support—parents to help—brides to win; you may have these, or other such sacred and pre-eminent motives, to press the morning's labour and prompt the twilight thought. But when you are fairly *at* the work, what is the motive then which tells upon every touch of it?"—JOHN RUSKIN (*The Two Paths*).

The problem of definition.

THERE are few people who are not in some sense interested in education. Parents, teachers, school governors, ministers of religion, and politicians, all have the word frequently on their lips, and all may be supposed to use it with a more or less definite notion of its meaning. But if there is such a thing as a theory of education—and at this point we can only take leave to assume its existence—one of its functions must be the critical examination of current notions, and the exposure of their shortcomings. This is no superfluous task, for the smallest details of the educator's work are inevitably coloured by his general conception of its aim, and it is not too much to say that most of the defects of educational practice are due to the absence of any clearly conceived aim, or to the presence of a wrong one. For this reason we must at once face the problem, always a difficult one at the outset of an extended inquiry, of defining the scope of our subject. It is no doubt true that attempts to compress into a phrase the essential meaning that lies behind words expressing great general ideas—such as education, religion,

government—are in a manner foredoomed to failure. Still, as has been most wisely observed in another connection, we are apt "to underrate the importance of *seeking* for the best definition of each cardinal term, and to overrate the importance of *finding* it. The truth is—as most readers of Plato know, only it is a truth difficult to retain and apply—that what we gain by discussing a definition is often but slightly represented in the superior fitness of the formula that we ultimately adopt; it consists chiefly in the greater clearness and fulness in which the characteristics of the matter to which the formula refers have been brought before the mind in the process of seeking for it."[1] In giving early prominence to the discussion of a definition of education, we shall at any rate place ourselves at the right point of view for clearer insight into the nature of the educator's task, though we may not reach results whose practical value is at once apparent.

Two uses of the word education.

To begin with, let us distinguish between two uses of the word education, a wider and a narrower. In the wider and less definite sense, education means that process of development in which consists the passage of a human being from infancy to maturity, the process whereby he gradually adapts himself in various ways to his physical, social, and spiritual environment. Thus Rousseau and Wordsworth have told us much of the "education of nature"; and thus we sometimes regard the perusal of a book, the cultivation of a friendship, a sojourn in a foreign country, the discharge of parental and civic duties, the observance of law and custom, and membership of a religious organisation, as parts of a prolonged process of education.[2] But in the narrower and more definite sense in which the term is used in common speech and in legal enactments, education does not include self-culture and the general influences of one's surroundings, but only those special influences which are consciously and designedly brought to bear upon the younger by the adult portion of the community, whether through the family, the Church, or the State. It would, of course, be pedantic to cavil

[1] H. Sidgwick, *Principles of Political Economy*, p. 49.
[2] Dealt with interestingly by J. MacCunn in *The Making of Character*, pt. ii.

at the broader use of the word; but the process of education, strictly so called, includes only the operation of measures expressly intended to modify the child's development, and devised in accordance with a more or less clearly conceived purpose.[1]

The aim of education.

Understanding education in the latter sense, and fastening our attention chiefly upon the function of the teacher, the typical educator, let us next inquire into the nature of the ideal which education should seek to realise. In doing so, we may seem to travel far from existing facts; but after all, ideals are greater than facts, because they are an essential condition of progress. We observe, then, that though school education is our main theme, this is not entirely a question for schoolmasters, nor for any other single class of the community. Like the parent, the employer of labour, the religious enthusiast, and the rest, the teacher is apt to look at this question in his own peculiar way, and to emphasise unduly that side of the truth which happens to press most upon his attention. Now a discussion like the present should at least attempt to show forth the whole, of which the notions of common every-day thought are at best but parts or aspects. Let us then consider a few of these notions; but in doing so let us remember that every widespread error is almost sure to be the perversion of some important truth.

The "livelihood" fallacy.

The average man, especially if he happened to be an employer of labour, or an over-anxious parent, would probably tell us that the aim of school education is to enable the pupil to discharge more efficiently the duties of his future occupation; and that the worth of any ingredient of education—a branch of instruction, let us say—depends upon the directness of its bearing upon the needs of one's daily employment. He might hold that, even in a general as distinguished from a technical training, such a subject as shorthand is of vastly greater importance than history, or cookery than poetry. He might even contend that part of the time now devoted in the primary school to reading and writing would be

[1] The distinction is clearly brought out by J. S. Mill in his *Inaugural Address at St. Andrews* (1867), pp. 3, 4.

more profitably given to gardening or sewing. Now we need to look only at the plainest facts of life in order to discern an important element of truth in these opinions; for earning a living, or at least following an occupation, is too important a part of any well-regulated life to be neglected in the scheme of preparation. But, passing over the obvious fact that, at least in a democratic society, no one can certainly foretell, even within broad limits, in what particular way a child is destined to earn his living, it is not difficult to see that this bread-and-butter ideal is altogether inadequate. Possibly the ordinary day-labourer could do his work just as well without being able to read or write, but "reading and writing afford the means of that wider intercourse which leads to breadth and elasticity of mind, and which is enabling the working man of to-day to be as capable a citizen as was the country gentleman of [a century ago]".[1] Besides, though earning a livelihood is an important part of most people's concerns, yet it is only a part. The question how a man spends his leisure is as important as the question how he does his work; indeed his ways of employing his hours of relaxation go far to determine his efficiency as a worker. A person who has no intelligent interests beyond those of the office or workshop will inevitably live on a lower plane, intellectually and morally, than one whose life is fuller and richer, and he is an undesirabe product, even from the standpoint here condemned. The fallacy of supposing that all education should be practical and useful in this illiberal sense is a perversion of the profound and far-reaching truth that all the knowledge acquired, and all the habits formed in the days of one's youth, should be practical in a broad sense, useful for some one or other of the purposes of life.

The schoolmaster's fallacy.

If, however, the too anxious parent or the short-sighted economist is apt to entertain a one-sided ideal, no less so is the schoolmaster. His characteristic fallacy, for which, however, he is not primarily responsible, is that of identifying education with learning, and of regarding the acquisition of knowledge, or, more crudely still, success in examinations,

[1] Marshall, *Principles of Economics*, vol. i., p. 267.

as the proper aim of the school. This of course is another "idol of the cave". We need not insist at length upon the truism that mere learning, even if it go along with a well-disciplined intellect, may leave a person deficient in qualities which every one would place higher in the scale of values, and which the educator has it in his power to foster. Nevertheless, it is a truism which bears repetition only too well, because, through force of circumstances, an inadequate ideal lingers in practice even when no one would attempt to defend it on rational grounds. The system of examinations, and the tangible rewards associated therewith, have been mainly instrumental in keeping the idol of learning on its pedestal. That system, as we shall see in a later chapter, has its place and its value, and it has perhaps been subjected to undiscriminating abuse. But when intellectual ability, not to speak of mere learning, is made the sole measure of scholastic success, no words of condemnation can be too severe. The greatest English schoolmasters of recent times are just those who have seen most clearly the dangers attending "knowledge worship and the lust of the head," and who have had the courage to defy the application of purely intellectual standards.

The formulas of theorists.

The notions we have considered are wrong because they are only half-truths, and it is one merit of educational theorists that, though they have differed among themselves, and have sometimes failed to command the respect of practical teachers, yet they have exposed the one-sidedness of current opinions, and insisted upon the need of taking into account all the conditions of the problem. Herbert Spencer, for instance, has defined education as "a preparation for complete living,"[1] a definition which, though it does not carry us far, we may well accept, without binding ourselves to all the conclusions to which it leads its author. Others have sought to provide us with a better conception of education by pointing out that its aims are manifold, including the harmonious cultivation of the physical, intellectual, æsthetic and moral sides of human nature. In one respect this statement is suggestive: it warns us

[1] See *Education*, chap. i.

distinctly against partial and one-sided aims. It tells us that we must so train the young as to make it unlikely that we shall tend to foster by nurture types of character that are one-sided by nature—the irresolute man of reflection, such as Shakespeare has exemplified in *Hamlet;* or the rash and unreflecting man of action, of whom history and common experience furnish instances numerous enough; or the soul that seeks complete satisfaction in the æsthetic life, like that portrayed by Tennyson in *The Palace of Art;* or the mere animal in human form, like the young man of whom Addison says that "he had a great stock of health, but nothing else; and if it were a man's business only to live, there would not be a more accomplished young fellow in the whole country".

"Harmonious culture."

But difficulties lurk in the phrase "harmonious cultivation". To begin with, whatever value it possesses is of a purely formal kind. It yields no hint of the content of the curriculum, or of the actual aims of training. We are left to suppose, for instance, that it matters little what we teach, or what sort of conduct we encourage, so long as we are in some way sharpening the pupil's wits and cultivating his "faculties". And even if the formula were amended, so as to make it clear that it does matter whether we teach chess or geometry, and whether or not we follow the Spartans in including the art of larceny in our scheme of training, our difficulties are not at an end. For how are we to determine when the "harmony" here spoken of is being disturbed? Every thoughtful teacher and parent has felt the difficulty of fixing the point at which keenness of intellectual pursuit, or the recurrent glow of artistic emotion, or enthusiasm for cricket and football, seems likely to upset the balance, and to render life on the whole ineffective—perhaps tragically so. And they will be inclined to ask, "Where is your principle of 'harmony'? Instead of referring us to a complex array of faculties, and blandly bidding us see to their harmonious development, can you not supply us with some ruling principle, the application of which shall tend to ensure that kind of development? Is there no single aim, the seeking of which will in itself be a guarantee that all these things shall be added?"

The reply is not far to seek. The cloud of witnesses known as educational reformers, or at least those of them whose work is proving permanent and beneficent, declare in effect that the child is essentially and above all a "behaving organism"; that the teacher's ultimate concern is to cultivate, not wealth of muscle, nor fulness of knowledge, nor refinement of feeling, but strength and purity of character; and that in its influence upon the pupil's habitual motives to conduct all education that is worth the name finds its real meaning and value. In other words, the ethical aim is supreme. By this we do not mean that other aims are unimportant, but that they are safely pursued only when they are regarded as subordinate to the highest aim—the one thing in education that cannot possibly be overdone. We lay it down, then, not as a mere pious opinion, but as a statement to be taken in sober earnest, and to be applied unflinchingly in practice, that the ultimate aim of education—that from which the significance of all proximate aims proceeds—is the formation of character.

Morality the ultimate aim.

The reader may perhaps feel that, in spite of our strictures upon one-sided aims, we have ended by approving an aim which appears as one-sided as those we have rejected. Are not knowledge and conduct, it may be asked, two distinct spheres, and do they not stand for distinct aims which may fairly be regarded as of co-ordinate importance? Is not physical health, it may further be asked, at least as essential as right conduct? And what is one to think of a definition which requires that a moral end should predominate even in the science or in the drawing lesson?

An objection considered.

Upon this objection we remark, in the first place, that it implies an inadequate notion of what is meant by conduct and by morality. It implies that conduct is some part of life—three-fourths was the fraction suggested by one distinguished writer[1]—whereas in truth conduct is the whole of life, so far as life involves deliberate action. It implies, too, that morality is concerned only

[1] Matthew Arnold, *Literature and Dogma*, chap. i.

with such matters as telling the truth, paying one's debts, and the like, and that moral education correspondingly consists in the direct inculcation of a code of ethical maxims; whereas in fact morality is an attribute of all conduct. Now the pursuit of health or of science or of art is one kind of conduct. If we are training our pupil to respect and care for his body, or to search faithfully and strenuously after truth, or to appreciate rightly the beauty of the world around him, we are thereby training him to habits of good conduct; and it is just this training which is the great thing, at least in a general as distinguished from a special education. The pupil who does not attain to honesty and thoroughness in the pursuits of the schoolroom is false to his vocation, and is in that sense an immoral person, like the careless workman of whom it was said that he "broke the whole decalogue with every stroke of his hammer".

In the second place, it must be remembered that, after all, some form of conduct is always the final upshot of acquired knowledge. An effective idea is simply an impulse to action. What one does depends in great measure upon what one knows, and what one knows depends upon where one's interests lie. If, therefore, any branch of science or art or literature assumes the position of a dominant interest, other less worthy interests are at least weakened and perhaps annulled. When, for example, a boy has been taught history and geography so that, besides being of possible utility in the narrower sense, they have evoked an interest in the literature of travel and in sound historical fiction, and have thus saved him from the sporting paper and the "penny dreadful," then the teacher's instruction has had a truly moral effect. And let us reiterate that it is this moral effect, this opening up of worthy spheres of interest, which, in a general as distinguished from a technical preparation for life, is the surest and the severest test of the value of a school career.

It is interesting to notice the close parallel that exists between the doctrine here laid down, and the tendency of modern psychology. As the older pedagogy divorced intellectual and moral training, and concerned itself chiefly with the former; so the older psychology devoted itself mainly to the analysis of "the in-

tellectual powers," from which "the active powers" were sharply distinguished. Modern psychology has, however, partly through the influence of physiology, learnt the important lesson that knowledge is after all but the handmaid of action. "The willing department of our nature," writes William James, "dominates both the conceiving department and the feeling department; or, in plainer English, perception and thinking are there only for behaviour's sake. I am sure I am not wrong in stating this result as one of the fundamental conclusions to which the entire drift of modern physiological investigation sweeps us."[1] The pedagogic corollary is plain. Let the educator think of the ultimate effect of his measures upon action—during work and leisure, in the place of business and in the home, in the discharge of social and of civic responsibilities; and then, if he think clearly in other respects, he cannot go far wrong in the instruction and guidance of youth.

The doctrine of the supremacy of the ethical aim need not excite the alarm of those whose thoughts are chiefly bent, for economic reasons, upon sounder instruction and wisely planned curricula. There are many, it is to be feared, who, whilst they might yield a nod of approval to the doctrine thus abstractly stated, and would certainly use it to round a platform period, would yet give it a hesitant welcome as an idea meant to dominate all educational practice. But, even from their own standpoint, there is no real cause for such weak-kneed assent, since steadfast adherence to the more excellent way not only allows us, but actually requires us, to covet earnestly the best gifts, among which physical and intellectual culture surely take exalted rank. The noblest superstructure of character must come to grief unless it rest upon a firm foundation of healthy nerve and muscle. It is clear, too, that we cannot do the best, in the sphere of life in which we are placed, without knowing that sphere as well as our powers and opportunities permit. "True development is the development of that mind which is set, throughout, on the attainment, in its world, of those objects which it takes to be right, and

[1] See "Reflex Action and Theism" (in *The Will to Believe*, p. 114). *Cf.* the same writer's *Talks to Teachers on Psychology*, chaps. iii. and iv.

on the understanding of that world, so that it may be sure of their rightness."[1]

An objection to the supremacy of the moral aim may be raised in another quarter. Many teachers, inured though they may be to the counsels of perfection with which pedagogic literature swarms, will perhaps smile at the notion of remaining always upon the lofty plane here described. But let us remark that it is by no means necessary, in order that education may minister to morality, that the educator should be constantly thinking of the ultimate aim of his labours. As we have implied above, the act of eating one's dinner, or of taking exercise, since it forms part of conduct, has a moral significance; that is to say, it should be performed so as to aid, and not to thwart, the higher ends for which one lives. But it is not therefore necessary that we should at the time be thinking of aught else than the enjoyment of the meal or the walk. Similarly, we may seem temporarily to be teaching science for its own sake and art for its own sake, whilst in reality the ruling moral purpose is all the time exacting our obedience, since the true touchstone of excellent teaching lies in the question—How is this lesson likely to affect the pupil's future conduct, his habitual ways of employing his time?

Another objection.

The student of ethical philosophy may have been troubled, during his perusal of this chapter, with thoughts of the difficulties we are creating for ourselves in thus placing morality in the forefront, because the very meaning of the terms which we apply to conduct and character has been the subject of dispute ever since men began to think out the deeper problems of life. Arguing on this ground, one well-known writer has actually counselled the evasion of all such terms in the definition of education.[2] It is hardly necessary to say that, from the point of view here adopted, such a proposal is not for one moment to be entertained. We could no doubt formulate the aims of education more neatly if ethical theorists had composed their differences. Those differences are of the speculative sort, turning

Education and ethics.

[1] Mrs. Bryant, *Educational Ends*, p. 290.
[2] Bain, *Education as a Science*, chap. i.

on Training College

upon the *ultimate* meanings of such terms as "right" and "obligation". Meantime, men have to live; and upon the educator is laid the task of helping them to live rightly. Whatever may be the ultimate meaning of right living, it is enough for the educator to keep in view the moral order he finds around him. The highest morality of his place and period serves as his working ideal; and that morality takes specific shape in the virtues that are most prized by the best members of the community.[1] The most enlightened parents desire that their children should be trained to habits of industry, self-control, perseverance, truthfulness, and the like; and the teacher who practically recognises such training as the main function of the school has no obligation laid upon him to trouble himself about the problems of ethical theory. One may say so much, without denying that the study of ethics will tend to illumine the teacher's judgment upon all matters relating to the highest ends of his calling.

The social aspect of education.

It is just here that there comes into view the social and national aspect of education. Up to this point we have spoken of education as a process of aiding the development of individual character. But in truth we cannot conceive of an individual living and developing in isolation from society; and there seems at first sight to be a certain antagonism between the claims of the individual and those of society. Plato and Aristotle solved the difficulty by merging the claims of the individual in those of society; and this was the common tendency in pre-Christian ages. Until recent times, Christianity laid the stress upon the independence of the individual—not because of any one-sidedness in its teaching, but because the early Christian, feeling himself spiritually a stranger in a strange land, found it necessary to separate himself very definitely from "the world". But if Christianity teaches that each must work out his own salvation, it also teaches that we are members of one other. Shall we say, then, that education has a twofold object, the perfection of the individual, and the good of the community?[2] It would be

[1] *Cf.* J. S. Mackenzie's remarks upon what has been called the "ethos" of a people, *Manual of Ethics*, chap. xii.

[2] *Cf.* Miss Beale, *Work and Play in Girls' Schools*, p. 2.

truer to say that its object is to help the individual to seek his own perfection in and by seeking the good of the community.[1] Those philosophers who have striven to reconcile the claims of the individual and of society would have done well to remember that the isolated individual is a figment of the imagination. We may say, as we have said above, that education aims, so far as its limitations allow, at the formation of the individual character; and we may with perfect consistency say in the same breath that it aims at the making of good citizens.

The national aspect.

By the making of citizens we must not be understood to mean the inculcation of a narrow and selfish patriotism. This warning is necessary, because it seems only too possible to take a parochial view even of a great empire. The waving of national flags and the singing of national anthems, though quite proper in their way, stand for a very small part of what we mean by trying to make good citizens. What is really meant is that the spiritual inheritance of a British or an American or a German child is predominantly British or American or German, and that in that inheritance he must on the whole find salvation. When, for example, we speak of training a boy to conduct himself as a gentleman, we refer implicitly, in this country, to the conduct of an English gentleman. Even conscience —the feeling of uneasiness that comes of violating a moral principle—is to a great extent the voice of the "tribal self". And if national ideals are a governing factor in the direct fashioning of character, no less are they operative in the determination of curricula. That the national culture should form the basis of instruction has generally been recognised as an axiom in regard to the primary school, and is becoming more and more recognised in the sphere of higher education. "It is our duty," said William II. of Germany, on an occasion[2] which was epoch-making for the higher schools of his country, "to educate men to become young Germans, and not young Greeks and Romans. We must relinquish the basis which has lasted for centuries, the old monastic

[1] See Mackenzie's *Manual of Ethics*, chap. ix.
[2] The Berlin Conference, December, 1890.

education of the Middle Ages. We must make German the basis, and German composition must be the centre round which everything turns." We may accept this declaration, without accepting the false patriotism that inspired it. The national culture must be the *basis* of all school instruction, but there must be no narrowing of the educated man's outlook and sympathies. The national greatness, if it exist, must be understood and appreciated, but there must be no exploitation of the people by privileged classes, who identify their own interests with those of the State.

Let us now sum up our results thus far. Summary.

1. The all-inclusive aim of education is to contribute, as far as its limitations allow, to the formation of character. To deny this is to confess oneself unable to see the wood for the trees.

2. By this we do not mean to exalt the righteous fool above the intelligent knave. It might be difficult to determine which of the two does the more harm. Though the intellectual and æsthetic aims are subordinate, they are essential; for we cannot do the best without knowing the best, and finding our pleasures therein.

3. The aim of education is essentially practical; not indeed in the bread-and-butter sense, but in a large sense. Knowledge which cannot be turned to use in some department of practice is worse than worthless. There is perhaps no knowledge which in its very nature is of no utility; but there is a great deal taught in schools which a child is unable to apply to the purposes of life; for example, catalogues of geographical facts, strings of dates, exceptional word-inflexions, problems in stocks and shares, unintelligible catechisms, *et hoc genus omne*. Our condemnation must rest, however, not only upon isolated instances like these, but upon comprehensive systems of education which place knowing above doing, *kennen* above *können*.

4. Since the child is destined to live out his life, not as an abstract individual, but as a member of a community, we may consistently define education as the making of good citizens.

Turning now to the means by which these aims are to be realised, one thinks straightway of the process of building up in the

pupil's mind a fabric of knowledge about the various recognised branches of instruction. This part of education takes up so large a share of the schoolmaster's time and attention that it has often been regarded as the equivalent of "schooling". His work, has, however, another side, that of controlling and directing the child in matters of conduct. The two sides, teaching and training, have often been symbolised, not without justification, by the book and the birch respectively. In these days it would of course be a waste of labour to protest that teaching means more than "putting a child to his book," and that control and guidance mean more than the application of the rod. What they do mean, it is the business of the educator to discover, and a sound theory should help him in his quest. The point here insisted upon is that, whilst in his capacity as controller of the child's conduct he is contributing to the formation of character, in his capacity as instructor he is still aiding to form character, but indirectly, by quickening and expanding the pupil's interests, and by leading him to know and to revere the truth.

The means of education. Instruction and training.

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T. P. Nunn, in his *Education: Its Data and First Principles*, strikingly vindicates the claim of Individuality to be regarded as the supreme end. Mr. Clutton Brock, in *The Ultimate Belief*, upholds the equal validity of the intellectual, æsthetic and moral aims. Various historic aims are discussed by John Adams in his *Evolution of Educational Theory*. See also Welton, *What do we mean by Education?*; E. C. Moore, *What is Education?*; Dewey, *Democracy and Education* and *The School and Society*; Bagley, *The Educative Process*, chap. iii. For a recent and most stimulating study see A. N. Whitehead, *Aims of Education*, chap. i.

CHAPTER II

THEORY AND PRACTICE

"Eine richtige Theorie ist das Praktischste, was es geben kann."

—DÖRPFELD.

THE question whether there is, or indeed can be, a science of education truly so called, has given rise to not a little controversy. Before passing on to more purely pedagogic topics, it may be well, therefore, to endeavour to clear away the dust of that controversy by inquiring in what sense the pairs of correlative terms "science" and "art," "theory" and "practice," so commonly used with reference to education, are appropriately so used; and what is the relation between the two aspects of education supposed to be connoted by these terms. Such a logical inquiry is the more necessary at this point, because of the undisguised contempt, or at best the mere easy-going tolerance, with which the theoretical study of education is viewed in some quarters. We may not hope to justify that study within the limits of the present chapter; but we may succeed in making clear what a science or a theory of education should be able to accomplish in order that it may be worthy of the name.

The purpose of this chapter.

The reader will probably anticipate the conclusion that the question whether there is a science of education is to some extent an affair of words. If we think of any branch of human knowledge which by universal consent is ranked among the sciences, we find that it consists of a connected and systematised body of truth, possessing generality of form, employing a more or less settled terminology, and pursued for its own sake, without special reference to any ulterior practical end.

Science and Art.

Thus the geometer, the chemist, the physiologist, the geologist, and the psychologist, as such, seek to build up systems of truth, not necessarily with any thought of the uses to which the results of their investigations may possibly be put by the engineer, the manufacturer, the physician, the mining expert, and the teacher, respectively.

If, on the other hand, we think of those branches of investigation which no one would refuse to place among the arts—agriculture, mining, and navigation, for example—we find that each of them, while it may also possess a systematic body of doctrine and a technical terminology, pursues some aim other than knowledge; that its primary object is, not to know, but to do or to effect something. The distinction, though not a very sharp one, is sufficiently clear. Using the terms science and art, then, in these broadly contrasted senses, it is quite obvious that education is an art and not a science. Some of the arts, however, have been brought to such a degree of system and generality, that they are often spoken of as sciences; but in this case we must distinguish between the pure sciences, which pursue knowledge for its own sake, and the applied sciences, which correspond to certain of the arts as we have defined them. The arts we have named, as well as medicine, surgery, and all others which are grounded on scientific principles, may thus be alternatively described as applied sciences. Assuming that the study of education offers a systematic and logically coherent body of doctrine,—an assumption which we shall attempt to verify in the remaining chapters of this book—we may call education an applied science.

Theory and practice.

We come now to the terms theory and practice. Some of the pure sciences—*e.g.*, biology, chemistry, and physics—have a theoretical and a practical side, the former comprising a systematic account of the facts and generalisations with which the science is conversant, whilst the latter involves that quickness of eye, steadiness of hand, and skill in the manipulation of materials, upon which the advancement of science so largely depends. The arts or applied sciences also have their theoretical and practical sides; but, of course, with this difference, that, whereas in the pure sciences the practice exists for the sake of the theory,

in the applied sciences the theory exists for the sake of the practice. The complete pursuit of any of the arts implies, then, two things; first a systematic body of knowledge, drawn largely from the appropriate sciences, and constituting the theory of the art; and, secondly, those elements of skill and empirical tact which constitute the practice of the art. Applying this distinction to the problem before us, we may speak provisionally of a theory and a practice of the art of education. It is true that the term "practice" is ambiguous. We have reserved it here to denote the actual work of the teacher in the school. We are aware that books are written, syllabuses devised, and examination papers composed on "the practice of education" as distinguished from the "theory". But no one who has tried his hand at these things will deny that the distinction is hard to maintain, the fact being that the whole subject, so far as it aims at systematic thought and exposition, is rightly named theory. The real distinction is that some parts of the theory lay stress on general aspects, and others on special details. In the present volume, no distinction is made between theory and practice in this sense. As we use the terms, practice is the affair of the schoolroom, not of the study.

Causes of prevalent distrust of theory.

It will be instructive at this point to consider the chief causes of the distrust with which theory is sometimes regarded, and the neglect with which it is treated, by those who are practically concerned with education every day of their lives. We have not ventured to assume without qualification or apology that there exists a body of knowledge worth calling a theory of education. But at least there have been many serious attempts in this direction, and it will be well to inquire why these have failed to impress so many teachers.

(1) Theory lags behind practice.

In the first place, it is well known that in the pursuit of any art, theory waits upon practice. Men tilled the ground and sailed the seas and practised the healing art, before they worked out anything that deserved to be called a theory of the art of agriculture, of navigation, and of medicine. Now if this is true of the arts that correspond to the most primitive of instincts, those relating to immediate self-

preservation, much more should we expect it to be true of the more elusive and less obviously necessary art of education. So it happens that we enter upon the twentieth century without having achieved a complete and coherent account of the aims and means of education. Partly owing to the fact that teaching was so long regarded as an incidental function of the clerical profession, and partly owing to a certain national obtuseness in realising the importance of the subject, our progress in the practice of education cannot be called astonishing; and the progress of theory is therefore slow. That this, however, is no reason for despising and neglecting the material we do possess is the faith in which this book is written, and in which a great deal of promising work is now being done.

(2) Obsolete psychology.

In the next place, it is not to be expected that a satisfactory theory of any art can be expounded, when the pure sciences upon which it depends are in an unsettled state. Now there is no study which has made more striking advance in recent times than psychology, the very science to which education stands specially indebted. The psychology of former days was vitiated by the assumption that the mind is endowed with a number of independent "faculties"—memory, imagination, reasoning, and the like—each susceptible of and requiring separate culture. This error is of course no longer committed by the competent psychologist. Indeed he has tended to go to the other extreme of abandoning the useful word "faculty" altogether. On the other hand the mistakes of the faculty-psychology are still frequent in works on education. "One is constantly coming across disquisitions," wrote Dr. James Ward, "on the training of the senses, the training of the memory, the training of the imagination; of the faculties of conception, abstraction, judgment, and so on. I know that many most excellent precepts are given to the world in this way; I admit that it has the merit of being popular and seeming easy. But I dare to say, and that confidently, that it is a bad way none the less."[1]

[1] *Psychology Applied to Education*, p. 103. Though written many years ago, this statement is by no means out of date. See *infra*, p. 94.

One of the most cogent reasons why it is a bad way has been well put by Dr. John Dewey. Referring to "the modern conception of mind as essentially a process—a process of growth, not a fixed thing," he says: "According to the older view, mind was mind, and that was the whole story. Mind was the same throughout, because fitted out with the same assortment of faculties whether in child or adult. If any difference was made it was simply that some of these ready-made faculties—such as memory—came into play at an earlier time, while others, such as judging and inferring, made their appearance only after the child, through memorising drills, had been reduced to complete dependence upon the thought of others. The only important difference recognised was that of amount. The boy was a little man and his mind was a little mind—in everything but size the same as that of the adult, having its own ready-furnished equipment of faculties of attention, memory, etc. . . . The course of study was thoroughly, even if unconsciously, controlled by the assumption that since mind and its faculties are the same throughout, the subject-matter of the adult, logically arranged facts and principles, is the natural 'study' of the child—simplified and made easier, of course, since the wind must be tempered to the shorn lamb."[1]

(3) Mistaken applications of psychology.

But even if we are careful to ensure the soundness of our psychology, we may easily go wrong in applying it to educational problems. The attempt has often been made, for example, to construct model curricula, based on the proposition that the business of instruction is to supply an all-round mental gymnastic. But, as we shall see more fully in a later chapter, such subjective considerations are by no means a safe guide to the choice of studies. And that psychology can furnish no adequate guidance in the framing of curricula is only part of the larger truth that it cannot decide any question relating to the aims of education—a point that was brought out in the first chapter. Psychology does undoubtedly furnish us with valuable hints when we come to inquire by what methods our aims may best be realised. What these aims shall be, however, depends upon our ideals of life and conduct, and not upon anything that

[1] *The School and the Child* (ed. Findlay), p. 112.

psychology professes to teach us. Instead of appealing to psychology we must inquire what knowledge on the whole is of most worth, and what are those virtues of mind and heart which are most valued in the community in which we live, and which constitute the moral atmosphere breathed by its best members.

(4) Piecemeal applications of psychology.

The attempt to found a theory of education upon psychology alone has led to another result which can only tend to bring that theory into disrepute. It has been the fashion to compose, for the benefit of young teachers, books which are in effect systematic treatises upon elementary psychology, interspersed with a regular series of pedagogic comments and applications. The result has been disastrous in a twofold sense. First, the natural order of procedure has been inverted. A theory of education must start from its own premises, and must pursue its own course by its own methods, calling to its assistance psychology, physiology, ethics, "paidology," and the rest, whenever their help is wanted. Otherwise the student is never led to face systematically the fundamental problems of education. These problems are far too weighty and complex to be dealt with fruitfully in a series of *obiter dicta*, strewn piecemeal through what is essentially a course in psychology. Secondly, such a mode of treatment lends itself with fatal facility to the premature and useless "application" of uncertain or (for the purpose) unimportant psychological data. There may come a time, for example, when the results obtained by the cultivator of experimental psychology will be sufficiently assured and important to find a place in any systematic attempt to furnish guidance to the young teacher. But that time has hardly yet arrived, and, even if it had, the approach to the problems in question should be from the educational rather than from the psychological side. It is no doubt an advantage that the teacher should, on the analogy of other professions, begin by mastering the really relevant portions of certain sciences. Having done so, he should go forward to an independent study of the theory of his art. Only so can the problems of education be seen in their true perspective, and only so can the conditions upon which their solution depends be fully grasped.

The unsatisfactory character of these applications of psychology to education is illustrated by the general failure to establish any vital connection between the so-called theory on the one hand, and the practical problems of the schoolroom on the other. In the light of the preceding remarks, it is easy to see that the two things cannot "hang together". Hence the impression of disconnectedness that one experiences in passing from the first to the second part of certain manuals written for teachers. The part labelled "theory" is a disquisition upon the training of the mind in various directions. The reader is disappointed by the leanness of the land he has explored at considerable pains; and he passes with a sense of relief to the part labelled "practice," which is often full of excellent empirical precepts, which appear, however, to be strangely independent of the preceding "theory".[1]

(5) Divorce of "theory" and "practice."

But even though the young teacher has approached the study of education by the right avenue, and has been led to understand and appreciate the best that has been done in the field of pedagogy, we must remember that we have gone but a little way towards the making of a teacher. Good teaching, like the efficient practice of any other art, is a function of many variables, of which the study of principles and methods is only one. That study, if properly pursued should indeed guard the young teacher from many pitfalls. It should save him from becoming a blind imitator either of his own past self or of other people; it should enable him to improve upon traditional practice; it should render his own experience a thousand times more fruitful, by enabling him to bring it continually to the test of principles; and it should raise his occupation to the dignity of a real profession, which it can never be so long as he works on a merely imitative and empirical level.

(6) Unfair demands upon theory.

But none of these results can be accomplished if he be seriously lacking in the other qualities that go to the making of a teacher;

[1] This was the impression produced, for example, by Compayré's *Cours de Pédagogie* (translated by W. H. Payne as *Lectures on Pedagogy*), and by many of the older English and American works on education.

if, for example, he be comparatively ignorant of what he professes to teach, or if he possess only in a low degree those personal gifts which are at least as important to a teacher as is a good "bed-side manner" to a physician, or presence of mind to a military officer. And so it may easily happen that one who has studied the theory of education with the utmost care and with considerable insight may turn out a signal failure as a practical teacher; just as it may happen that one who prides himself upon never having read a book on teaching may attain all but the highest success, through the possession of a quick and ready sympathy with children and their ways of thinking, a winning manner, a fund of enthusiasm for his vocation, and instincts which really enable him unconsciously to construct a very serviceable theory of his own.

It is manifestly unfair to estimate the worth of educational theory by reference to extreme examples such as these. Good teaching has been done without a knowledge of theory, and bad teaching has been done with it; but these are facts which should cause no surprise to one who rightly apprehends the relation between theory and practice. Theory and practice are not opposed, but complementary; not different things, but different sides of the same thing, each meaningless without reference to the other. A good practical teacher must have a theory behind his practice, whether implicit or explicit; and a sane theorist must have constant regard to existing circumstances. There are two extremes to be avoided; that of the mere theorist, who spins fine webs of doctrine that collapse on contact with the hard facts of experience; and that of the mere empiricist, or rule-of-thumb practitioner, who seeks no rational basis for his practice. But the *mere* theorist and the *mere* empiricist are both *mere* consequences of one-sided views. Experience which has not been reflected upon is only a treadmill round, whose value may easily be exaggerated; whereas theory which is not the result of reflection upon actual practice must be received with extreme caution. "The history of education," wrote the late Prof. Sidgwick, "is the battle-ground and burial-ground of impracticable theories; and one who studies it is soon taught to abate his constructive self-confidence, and to endeavour humbly to learn the lessons and harmonise the results

of experience ".[1] To which we may add that the attempt to "harmonise the results of experience" is precisely what we mean by sane theorising, and precisely what Sidgwick brilliantly exemplified in his essay on "The *Theory* of Classical Education". "Sound practice is sound theory unconscious of itself; sound theory is merely sound practice conscious of itself."[2]

(7) Untimely theorising.

Lastly, we are bound to acknowledge the danger that in teaching, as in other departments of practice, the theoretical attitude of mind may become so habitual as to induce a dreaminess, or an impatience of the facts of the concrete situation, which are alike fatal to efficiency when one is fairly at the work. The practical schemes of the apostolic Pestalozzi were not successful; and in his less happy moods he is said to have banged the doors upon disappointing classes, and on one occasion to have thrown his boots at an offending colleague. The moral is not, however, to be drawn too hastily; it lies, not against theory as such, but against its untimely obtrusion. The "day-dreams of a schoolmaster" may indeed be sometimes fruitful of results; but on the whole it is certainly undesirable that he should be occupied in the hours of school with thoughts of the ultimate meaning and issue of his labours. He should rather trust, when amongst his pupils, to the afterglow of his periods of private illumination. In this way he may find that even the apparently trifling details of his procedure may be carried out so as to further the supreme purpose of education.

Conclusion.

The apology for the study of education amounts then to something like this,—that an indifferent teacher, provided his weakness be not due to incurable personal defects, may be made a tolerably good one; and, further, that good teachers will be all the better, and even "teachers by the grace of God" none the worse, for having their stray thoughts about their art extended and deepened, and thus made more available for systematic guidance. It may be as true of the great teacher as of the great poet, that he is born, not made. The question before us is not to be settled, however, by an adaptation of a stale

[1] *Essays on a Liberal Education* (ed. Farrar), p. 83.
[2] Laurie, *Teachers' Guild Addresses*, p. 1.

aphorism. There is no urgent need of poets below the first rank, but there is an urgent need that teachers of moderate gifts should be trained to turn those gifts to the very best account, and one way of doing this is to lead them to that reflective contemplation of experience which is the essence of healthy theorising.

REFERENCES

On the relations between Theory and Practice, see Adams' *Evolution of Educational Theory*, chap. i.; Mill's *Logic*, bk. vi., chap. xii., §§2-5. On psychology and education consult C. Fox, *Educational Psychology;* Dewey on "Psychology and Social Practice" in *Educational Essays* (ed. by Findlay).

The young teacher is counselled to receive with caution the doctrines of the psycho-analysts. Crichton Miller's *New Psychology and the Teacher*, and Hadfield's *Psychology and Morals* are to be recommended. So also, for a general view, is Woodworth's *Contemporary Schools of Psychology*.

PART II

THE MACHINERY OF EDUCATION

CHAPTER III

THE SCHOOL

"The schoolmaster is abroad"—LORD BROUGHAM.

WE agreed in the first chapter to use the term education to denote those influences which are designedly brought to bear upon the child for the furtherance of his development, and especially those which are exercised by the teacher in the school. Whether the word should be employed in this stricter sense, or have its meaning extended so that it stands for the whole idea of personal development, so far as that depends upon external conditions, is a question of convenience rather than of principle. It is important, however, that we should know what we mean, and should not allow the ambiguity of a term to confuse our thinking. Though the school is thus our main theme, the larger aspect of the subject must now and again compel our attention. For example, though in the present chapter our chief purpose is to characterise the different kinds of schools that are found in modern civilised states, we must first take note of another powerful agency in the child's development, *viz.*, the home. This is necessary, not only because the influences of home and school are intimately connected, but also because it is sometimes sought to combine in one institution, as far as may be, the functions of both.

Home influence.

The immense importance of the home scarcely needs to be emphasised. Two children may attend the same school, may come under the influence of the same teachers and the same organisation, may pursue the same studies and perform the same exercises; and yet may differ *toto cœlo* as regards their general knowledge, their interests, their speech, their bearing, and their moral tone, according to the homes they come from. In some ways the school is almost helpless when the in-

fluence of the home is on the wrong side. During the earliest and most impressionable years, the family is the child's entire social environment; and though his social circle widens when he goes to school and begins to form outside friendships, yet the family remains for some years the largest and most central portion of the circle. Under average circumstances, and still more when the conditions are wisely ordered, the home is the soil in which spring up those virtues of which sympathy is the common characteristic. It is there that the warmest and most intimate affections flourish. It is there that the child learns the difference between generosity and meanness, considerateness and selfishness, justice and injustice, truth and falsehood, industry and idleness; and it is there that his habitual leaning to the one or the other of these is first determined. It is there, too, that he learns to speak, acquires a full or a scanty vocabulary, and, corresponding therewith, a wide or narrow range of common ideas.

Different views as to the function of the home.

The theories of education that have won general attention lay varying degrees of emphasis upon the function of home life in a child's up-bringing. The ancient Greeks, in accordance with their low conception of the position of women, made little of the place of family life in the training of the young. John Locke, writing with the children of the wealthy in view, and mindful of his own unhappy schooldays, declares roundly in favour of home education, under a private tutor, as opposed to that given in public schools. Rousseau, with small faith in the family under the conditions of modern civilisation, begins by assuming that Emile is an orphan, and that his tutor is charged with parental responsibilities and succeeds to parental rights. But Pestalozzi, with infinitely truer insight, regarded the home as the one indispensable factor in the young child's training, and the mother as the fount and source of all true education; indeed, one of the rewards of the reader who ploughs through the good old man's incoherent pages, is the occasional perusal of passages in which this cardinal doctrine is passionately preached.[1]

[1] See *How Gertrude teaches her Children*, and especially *Letters on Early Education*, addressed to J. P. Greaves.

It may safely be asserted that during the first six years the child's proper place is at home, or in some institution which seeks to realise as far as possible the freedom, the spontaneity, and the affectionate intercourse of a good home. In this country we talk familiarly of "infant schools"; but it should be remembered that this is an extension, and in a sense a dangerous extension, of the term "school," adopted from the vocabulary of a man[1] whose anxiety for the welfare of neglected children exceeded his knowledge of their true needs. A school is a place for work, directed to ends of which the pupil is to a greater or less extent aware; whereas early childhood is the time for play, and it is only by enlisting the small child's play instinct that we can properly engage his self-activity. Froebel showed a deep insight when he called his institution a Kindergarten. The prophet has remained comparatively unhonoured in his own country; but we do him a very questionable honour when we start children of four or five along the uninviting paths that lead to mastery of the "three R's," reserving a place in the time-table for exercises labelled "Kindergarten". The infant school and the private Kindergarten are valuable institutions for the children of parents who cannot or will not discharge their natural obligations towards their younger children, and this is especially true as regards great towns; but when they place the stress on teaching rather than on physical and moral culture, and when they are conducted by persons unacquainted with the true principles of infant training, their value resides chiefly in the fact that they keep the children out of worse mischief.[2]

The home in relation to early childhood.

Some parents of the wealthier classes prefer to keep their children, and especially their daughters, at home, even after the nursery stage is passed, by converting the nursery into a schoolroom, and by employing a tutor or governess, or by themselves playing alternately the parts of parent and teacher. A boy or girl thus educated of

The home in relation to the education of older children.

[1] Samuel Wilderspin. See his *Early Discipline Illustrated*, p. 3.

[2] In the slighter stress placed upon formal instruction and discipline, the "ecoles maternelles" of France contrast favourably with our infant schools. See *Report of Consultative Committee on School Attendance of Children under Five Years of Age* (1908), pp. 204-5.

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course lives a sheltered life, and the teacher's intimate knowledge of the pupil affords opportunities of nicely adapting means to ends. Experience seems to show, however, that, even if a sufficient degree of teaching skill be taken for granted, arrangements of this kind are rarely successful. "How great the value of school discipline is to girls, they can appreciate who have had experience of the vagueness, inaccuracy, want of application, desultoriness, want of conscience about work, dawdling habits—of young women brought up at home under the care of governesses. Of course there are exceptions, but, for habits of work, power of work, conscientious endeavour in her work, the faithful schoolgirl is, as a rule, far before the girl who has not undergone school discipline."[1] And even if the evils here described be averted, such advantages as home education possesses may be purchased at far too great a cost. "Home-keeping youth have ever homely wits"—and narrow sympathies besides. The influence of family is indeed an essential stage in learning to love one's kind; for the unselfishness that comes of instinct is a necessary preparation for that which is afterwards acquired. But if the child's outlook is bounded by the garden fence, then the development of the sympathetic impulses is indirectly checked, he is disposed to become clannish and exclusive, and the result is merely another form of selfishness. From such dangers the school society provides a means of escape. The school is a half-way house between the entirely domestic life of early childhood, and the larger life that awaits the youth when he quits the parental roof.

Co-operation of parents and teachers.

We conclude, then, that even where parents are able and willing to provide for the instruction of their children in the home, it will still be best in general to send them to school. The division of responsibility between the home and the school must by no means be taken to imply a rigid separation of the two. It is, of course, true that the school (at least the day school) is mainly responsible for instruction, and only in a less important degree for the direct formation of character; whereas parents are chiefly responsible

[1] Miss Charlotte M. Mason, *Home Education*, p. 213.

for specifically moral discipline, and only in a slight degree for instruction. The wise parent and teacher will, however, seek to understand each other's aims, and to second each other's efforts, so that the child's education will form an organic whole. Nothing can be more demoralising to the child than lack of unity and harmony between his home life and his school life. The teacher on his side should understand how immensely his own immediate aims are furthered by the whole-hearted sympathy of parents; and intelligent parents should on their side try to understand the inevitable limitations of the school, and should use their superior knowledge of the child's individual capacity and tastes to supply what few schools, if any, can give.

Boarding schools.

This seems the right place for a brief consideration of the system of boarding schools, a system which is in effect an attempt to combine to some extent the functions of the home and the school, though in truth it is quite impossible that the place of the home in a child's upbringing can be effectively taken by any school, least of all by a large one. The general question of the relative merits of boarding and of day schools is by no means simple. The boarding school places the child more completely in the hands of the teachers, who ought therefore to be persons of proved capacity; whilst at a day school, to use the words of the Royal Commissioners of 1895, "the tone and character of the home, the ruling interests and ambitions of the parents, are much more potent and constant factors of the result". The boarding school practically requires the complete separation of the sexes, whilst the boy who attends the day school comes under the refining influences of female relatives. The boarding school deprives the home of the child's presence during three-fourths of the year, whilst the day school enables the child in a sense to educate the parents, upon whom are laid "the responsibilities and restraints imposed by daily contact with a quick and critical boy or a sensitive and observant girl". In the boarding school the pressure of public opinion, the force of tradition, and the influence of the individual scholar, are far more powerful instruments of good or evil than in the day school. Further, "the day school exercises a more direct influence in its

neighbourhood, is less respective of class, and more common to the whole people, and, in order to its healthy life, needs a keener and more widely distributed interest in education. But the neighbourhood is, as a rule, very different in the two cases. The fit home of the boarding school is the country or the country town; but the day school needs a population around it, and so has its proper seat in our great cities or towns."[1]

The boarding school has in certain forms taken deep and abiding root in England, though it does not flourish in Continental countries, nor even in other parts of Britain. It must be borne in mind, however, that the position of the leading "public" schools of England finds its explanation, not in any deliberate comparison of the merits of day and boarding schools, but in considerations of a historical kind. If, at the beginning of the nineteenth century, England had had the same urgent reasons as Germany for a revision and extension of her whole educational system, she, too, might possibly have given the day school the first place in secondary education, and relegated the boarding school to a subordinate position. The course of history, however, determined otherwise, and "when the movement of reform touched English secondary education, it roused the boarding school first. Butler at Shrewsbury, Hawtrey at Eton, Arnold at Rugby were the leaders. They it was who raised the ideal of English secondary education, and their work established the old tradition of our higher schools on a new and surer foundation."[2] It must be borne in mind, too, that the great public schools are reserved for the wealthy and the privileged, that they are able therefore to secure the services of men of first-rate ability, that they meet the special requirements of parents whose social habits do not favour the regular and constant influence of the home; and that their powerful traditions are generally believed to have made them efficient training grounds for the governing classes of a nation whose peculiar destiny it has been to govern subject peoples. In a word, the continued prosperity of these schools is due to quite

[1] *Report of Commission on Secondary Education* (1895), vol. i., pp. 138-9.

[2] M. E. Sadler, "Problems in Prussian Secondary Education," in *Special Reports*, vol. iii., p. 153.

special causes, and in no way invalidates the general proposition that a combination of the influences of a good home and of a good school is the best arrangement for young people under eighteen years of age.

The same principle, the inadequacy of the home to the accomplishment of the end desired, will be found at work wherever the use of the boarding establishment is clearly justifiable. The lack of a good day school in the neighbourhood, the prolonged absence of the father from home, enforced residence in an unsuitable district, or the ill-health of the mother, might, for example, compel people of moderate means to use a private boarding school; though it should be remembered that a cheap school of this kind is necessarily a bad one. Again, the early loss of parents, and the consequent breaking up of the home, has led to the foundation of orphan asylums, often the nearest substitute for good homes that practical philanthropy can devise. Finally, places of refuge are necessary for those hapless children whose homes, owing to the abandoned character of the parents, are mere scenes of desolation and squalor. In all these cases, the boarding establishment is justifiable, either because there is no home, or because the home is inadequate to the requirements of healthy training; but it is manifest that such cases are exceptions of the sort that " prove the rule ". A good boarding school is of course better than a bad home; but it can never take the place of a good home, because it lacks the powerful bond of natural affection; its members are too numerous to admit of close individual knowledge; and the complete though temporary severance of the influence of teachers and of parents tends to produce an inner discord which can hardly work for the child's welfare.

So much for the relations of home and school, and the allied question of the relative merits of day and boarding schools. We now proceed to the problem of classifying schools according to their educational functions. Amid the endless diversities of detail that necessarily characterise the schools of a country like ours, in which systematic thought and action in educational matters are of quite recent growth, we find at least one broad distinction, the distinction between primary

Primary and secondary schools.

and secondary schools. But when we attempt to fix the line of demarcation between these two, or, what comes to nearly the same thing, to form a clear conception of what secondary education is, our task is not a very simple one. The Royal Commissioners of 1895 were compelled to report that the nature of secondary education was "variously and often vaguely conceived by their witnesses," and that "the definitions or descriptions in the evidence were all of a rough and ready kind, occasioned for the most part by the experience of the witness, or the need of enforcing some special point". The haziness here complained of is to some extent perhaps inevitable; for though it may be necessary for administrative purposes to make the sharp distinctions looked for, it is too much to expect that any possible definitions of primary and secondary education will not lead us in difficulties when we come to consider particular cases.[1]

The term "intermediate".

Secondary education is sometimes comprehensively defined by saying that it includes all that which lies between the elementary school and the university; and it is in accordance with a definition of this kind that the term "intermediate" is sometimes applied to secondary schools.[2] Such a definition is, however, of a merely negative character, and so, even if we assume what it pre-supposes, that we know precisely what we mean by elementary and by university education, we are still left without any positive notion of the aims of secondary schools. Besides, the number of secondary schools whose pupils have generally a university career in view is comparatively small; the great majority of them send very few pupils on to the universities. The earliest secondary schools were no doubt places of preparation for higher institutions; but times have changed, and a secondary education is now required by many for whom there is no thought of proceeding to a university. The term

[1] In the thorough overhauling to which the various Regulations of the English Board of Education were subjected after the passing of the Act of 1902, the functions of the Secondary School were officially defined. See *Regulations for Secondary Schools*, Prefatory Memorandum.

[2] As, for example, in the secondary school system of Wales.

intermediate is not therefore a happy one, and in any case has no positive significance.

Instead of trying to sum up the distinction in a single phrase, it will probably be better to keep in mind the average primary school as we know it, and the average school which no one would refuse to call secondary, and to note the chief points of difference between them.

Differentiæ of primary and secondary schools.

The most obvious difference is that the pupils of a secondary school remain until a later age than those of a primary school. In the latter, the superior limit of age is usually fourteen, whilst in the former, school life may be prolonged as much as five years, but as little as one or two, beyond that limit. Now, as we shall see more fully in Chapter V, the age of fourteen or thereabouts coincides with epoch-making changes in the pupil's physical, intellectual, and moral nature; changes so great that a teacher who is experienced and skilled in the work of a primary school might find himself "at sea" if he were translated to the upper portion of a secondary school. Boys and girls of fifteen or sixteen usually require widely different management from that which was appropriate to them as children of eleven or twelve. They have acquired greater independence of character; they are beset by new sorts of moral pitfalls; they are appealed to by different kinds of motives; they need less of arbitrary control and more of friendly guidance; and they enter more fully into the meaning and purpose of school life. Nor are the junior pupils in a secondary school in the same position as the senior pupils in a primary school; for the presence of older boys and girls has a strong reflex influence upon the younger ones. This is especially true when, as in the greater schools of this country, large responsibilities in the internal management are entrusted to certain of the elder scholars. But in any case, the outlook of the younger pupils is different from that of boys of corresponding age in a primary school, and they feel themselves to belong to a different kind of school society.

(1) Age of pupils.

Another distinction, depending on the first, between the primary and the secondary school, turns upon the question of curriculum. In view, however, of the history of recent opinion and practice, it seems impossible to hazard a more definite

(2) Curriculum.

statement than that the instruction given in a secondary school is of a more advanced character than that given in a primary school.[1] There was a time, indeed, when a stereotyped idea of a general or liberal education for all who could afford it, based largely upon the study of Latin, and conceived without reference to the pupil's probable destiny in life, made delimitation easier. But even in countries like Germany, where the idea of "allgemeine Bildung" holds its ground most stubbornly, several types of general education are now recognised; whilst in the American states, formulas of general culture have definitely given place to bold experiments in "elective" studies.

Secondary education and technical instruction.

The stress of modern needs, and the abandonment of any common idea of what constitutes a course of liberal instruction, has made it at once more difficult and more necessary to distinguish between secondary and technical instruction. The Royal Commissioners of 1895 declared that "no definition of technical instruction is possible that does not bring it under the head of secondary education, nor can secondary education be so defined as absolutely to exclude from it the idea of technical instruction". "Technical instruction," they said, "is secondary, *i.e.*, it comes after the education which has awakened the mind by teaching the child the rudiments; and secondary instruction is technical, *i.e.*, it teaches the boy so to apply the principles he is learning, and so to learn the principles by applying them, or so to use the instruments he is being made to know, as to perform or produce something, interpret a literature or a science, make a picture or a book, practise a plastic or manual art, convince a jury or persuade a senate, translate or annotate an author, dye wool, weave cloth, design or construct a machine, navigate a ship, or command an army. Secondary education, therefore, as inclusive of technical, may be described as education conducted in view of the special

[1] The Welsh Intermediate Education Act of 1889 defined intermediate education as a course of education which does not consist chiefly of elementary instruction in reading, writing, and arithmetic, but which includes instruction in Latin, Greek, Welsh, and English, modern languages, mathematics, and natural science.

life that has to be lived with the express purpose of forming a person fit to live it."[1]

Now this passage surely illustrates the danger of conceiving secondary education in such a way that not only is the old idea given up of a general education suited to all alike, but the idea of a liberal course of study is in imminent peril of being abandoned altogether. We must distinguish carefully between the movement for a secondary education of a modern type, which should still be of a general character, preparing for life as a whole, and the movement for specialised instruction, conducted in view of the requirements of particular trades and professions. It is one thing to educate a boy in the light of his probable destiny, so that his general education may receive its tone and colouring from the actual realities of life, rather than from the traditions of the ancient seats of learning; it is another thing to prepare him for a definite occupation; and it is all the more necessary to mark this distinction carefully when the two sorts of preparation happen to be carried on under the same roof.

(3) Destiny of pupils.

The longer period of school life, and the more advanced character of the curriculum, imply a third point of difference between the secondary and the primary school, namely, that the pupils of the former are destined for occupations which require wider and deeper knowledge, and a superior degree of trained intelligence. It is true that the difference in this respect between the primary school and the secondary school of lower grade is probably no greater than that between the latter and the secondary school of upper grade; and it is true that the clever boy whose education has been confined to the primary stage will make his way in walks of life which may remain closed to the dull boy whose opportunities have been superior. But the fact remains that a complete primary school course will, so far as it goes, fit a child for the more mechanical occupations; and that a secondary school course should fit him for occupations which call for greater intelligence, knowledge initiative, and resource.

[1] *Report*, vol. i., p. 136.

On the whole, too, the pupils of a secondary school come from homes where the opportunities are favourable for sound physical development, and for the early formation of intellectual, æsthetic, and practical interests. The importance of these facts need not be enlarged upon, after what has been said about home influences, and about the need of the active co-operation of parents in furthering the aims of the school. The association of class distinctions with differences of grade in education is now, of course, subject to far more numerous exceptions than was formerly the case in this country. The sons and daughters of poor and uninstructed men find their way in increasing numbers to the higher schools, and eventually to the universities. Still, it would probably be found that, though not educated in the ordinary acceptation of the term, the parents of such children are usually persons of strong common sense and of high moral character, constituting in fact the *élite* of the working classes. And so, on the whole, the admission of their children to secondary schools (broad accent and shaky aspirates notwithstanding) probably creates few exceptions to the rule that the pupils of those schools come under salutary home influences. This is perhaps the chief justification of the over-lapping, so far as mere age is concerned, between the junior classes of the secondary and the senior classes of the primary school.

(4) Homes of pupils.

Finally, we note that, under existing conditions, the classes in a secondary school are much smaller on the average than those in a primary school. How far any difference in this respect can be defended on other than financial grounds is a doubtful point, though there is no doubt whatever that the differences actually found are far too great, and that the classes in primary schools are unduly large. The opinion is often maintained, at least tacitly, that whereas the unit in the primary school is the class, the unit in the secondary school is the individual pupil: in other words, that primary pupils are appropriately instructed *en masse*, whilst secondary pupils must receive individual attention. But it would be difficult to maintain this opinion as a matter of principle. The idea is indeed too often countenanced,

(5) Size of classes.

that "the elementary school teacher aims at the virtues incident to a large well-managed class—order, attention, a clear lead by the teacher, docile co-operation in the class," whereas "the secondary teacher, with his smaller group, needs these virtues less whilst he needs others more, because it is more open to him to cause his pupil to learn by stimulus rather than by guidance, by suggestion rather than by exposition, by the active effort of thought rather than by comparatively passive attention."[1] To wink at such phenomena as "docile co-operation" and "comparatively passive attention," as if these were permanent and inevitable incidents of primary school teaching, is to miss the whole significance of modern pedagogic thought, with its insistence upon the self-activity of the learner, and its abhorrence of cold assent. It would be difficult to justify on rational grounds any marked differences in the size of classes in primary schools and the lower portions of secondary schools; though of course in the upper forms of secondary schools, where written exercises properly take a leading place, and where it is more important than ever that individuality should be respected, the numbers should be smaller. As a matter of fact, however, the classes in primary schools are often very large; and the practical effects upon methods of teaching and discipline are important.

Summary.

In trying to fix our ideas of secondary education, we have seen, then, that the salient facts appear to be that some parents have the will and the means, or are able to obtain the means, to prolong their children's education for some years beyond the end of the primary school period; that children to whom these superior opportunities fall go forth into the world with more extensive knowledge and wider interests, and that youths thus educated naturally enter those occupations in which trained intelligence counts for most, perhaps after completing their studies at some place of higher education. We have seen, too, that besides these essential features of secondary education, there follow the practically significant but less essential facts that the

[1] *Report of Commission on Secondary Education*, vol. i., p. 207.

pupils of secondary schools come on the whole from homes of well-regulated comfort, and even of refinement; and that the smaller classes of the secondary school make the methods of instruction and discipline less mechanical, and more productive of active thought.

Classification of schools.

In the light of the preceding remarks, we may now set forth the different types of schools which, though with numerous differences of detail, are to be found in most modern civilised states.

(1) At the *sub-primary* stage provision is made for the training of children under the age of six or seven. This stage is represented in our own country by private Kindergartens, by the recently projected nursery schools, intended for children between two and five, and by the infant schools which form part of our primary system. It is represented also in France by the " écoles maternelles ". In Germany no official cognisance is taken of children under six years of age. In the American states, on the other hand, the work of the public Kindergarten has long engaged the serious attention of some of the ablest teachers and thinkers.

(2) The *primary* school (the " elementary school " of this country, the " Volkschule " of Germany, the " école primaire élémentaire " of France and the " common school " of the United States), provides for the education of children between the ages of six or seven and thirteen or fourteen. The full primary school course is designed to meet the needs of " the masses " who belong to the ranks of unskilled labourers. The conditions of passage from the primary to the higher schools are, as we shall presently see, widely different in different countries. Parallel to the public elementary schools, as regards the age of the pupils, we have in this country private preparatory schools of various types, attended by children whose parents prefer, whether on social grounds or in order to secure stricter continuity in the course of study, not to avail themselves of the public elementary schools. The preparatory and junior forms of secondary schools fulfil a like function.

The *higher primary* school (the " higher elementary school " of England, the " école primaire supérieure " of France, the " höhere

Bürgerschule" of Germany,—the correspondence being, however, by no means close) are intended to provide, for the most promising children from the primary schools, a continuation, on similar lines and in a practical direction, of the instruction given in those schools. The curriculum of the higher primary school is framed to meet the needs of those who are destined to become skilled artisans, or to fill the less important positions in business houses.

(3) The *secondary* school provides for the education of boys and girls up to an age varying from sixteen to nineteen. The secondary schools of England are of very different types, and, unlike those of countries where a strong central authority has been at work for a number of years,[1] and where the conditions are otherwise favourable to definite delimitation, are difficult to classify. The common distinction, however, between first and second grade schools is a fairly marked one. The second grade schools are those whose pupils usually leave at the age of sixteen or seventeen. They serve mainly for the education of those who are destined to occupy responsible positions in commercial and industrial life; they provide instruction of the modern type, and they are in close connection with the public elementary schools. The first grade schools are those whose pupils remain until the age of eighteen or nineteen and then proceed to a university, with the object of eventually entering one of the so-called learned professions, or one of the higher branches of the civil service, or of taking a place in public life, or of occupying leading positions in the commercial world. In practice the classification is by no means so simple. Some large day-schools have in fact to provide different kinds of education.

(4) The *continuation* school, inaugurated in this country by the Education Act of 1918, may be regarded as a part-time secondary school. If wisely planned, it will continue the elements of general culture begun in the primary school, and will prepare for the future occupation only in a liberal sense.

We have so far left out of account the extremely important

[1] See Sadler's *Problems in Prussian Secondary Education*, § xiii.

question of providing for the transfer of promising children from the primary to the secondary school. In discussing this, it will be instructive to notice first the very diverse arrangements which prevail in Germany and in America respectively. "In Germany, the secondary schools are organised almost independently of ordinary elementary schools, without any dovetailing of curriculum, and in such a form that clever boys have, as a rule, to leave the elementary school at nine years of age in order to enter the secondary school at the beginning of its quite different curriculum."[1] The comparative simplicity of the German system, with its strong central authority, its definite curricula, and its official regulations governing the various types of schools, would make it so far easier to establish a close connection between the primary and the secondary schools; and the movement in favour of postponing the study of Latin until the age of twelve years would, if it became general, do much to remove existing disabilities; but at present primary and secondary education are practically two closed systems. In America, on the other hand, the great majority of the secondary schools are deliberately organised as the crown and completion of the "common" schools; the latter, consisting of primary and grammar grades, lead on directly to the high schools. Now the tendency in Britain is to steer a middle course between the two extremes illustrated in the countries just named. For though the American plan of a common school for all alike up to the age of fourteen would in this country be quite impracticable, yet (if we except those first grade schools which have their own special channels of supply) attempts are made so to adjust curricula as to avoid awkward jolts when a child leaves a primary for a secondary school at the age of eleven or twelve. Two dangers are, however, to be averted in seeking to afford such facilities. The first is that children of only ordinary talents, whose parents are persons of straitened means, may be encouraged to proceed to secondary schools, when the higher primary school would be more suited to their needs. By this we do not mean that there can be too

Passage from primary to secondary schools.

[1] M. E. Sadler in *Special Reports*, vol. xi., pt. ii., p. 438.

much education. It has been remarked that we can no more have too much education than too much gravitation. This is true in a sense, but it is also true that the amount of education that is being given at any one time needs to be properly distributed. If the social structure were such that every youth could be kept at a full-time school until sixteen or seventeen, well and good. But under existing conditions, the boy of mediocre ability whose school life is thus prolonged, and whose parents are not in a position to "do anything" for him afterwards, is not a fortunate boy. The second of the dangers above referred to is that, in our anxiety to make it easy to pass from the primary to the secondary school, the standards of instruction in the latter may be modified and perhaps lowered. The aims of the secondary school are so far independent that its standards should be fixed and maintained without reference to outside considerations.

Boys' and girls' schools.

To one traditional mode of classifying schools we have hitherto made no express reference—that which depends upon difference of sex. In this country we have educated boys and girls together in the infant departments of the primary system, *i.e.*, up to the age of seven; but beyond that age we have preferred separate schools, except in rural districts, where "co-education" has been practised solely from motives of economy. Two questions are now occupying the attention of those who are most interested in the problem; first, whether co-education up to the age of thirteen or thereabouts, which has hitherto been simply tolerated as a matter of convenience, should be extended as a matter of principle; and, secondly, whether under any circumstances it is well to educate boys and girls together in the latter part of the secondary school period. The opponents of co-education lay stress on the danger of stimulating the consciousness of sex by the too close association of boys and girls, on the risk of making the boys effeminate and the girls hoydenish, on the physical and mental differences of the sexes as pointing to necessary differences of educational treatment, and on the difficulties connected with the staffing of the schools. Those who uphold co-education reply that the system is the only natural one, that it favours easier and more healthful relations between

the sexes, that its moral dangers under proper safeguards are immeasurably less than those which undoubtedly attend the segregation of boys and girls, that discipline is easier, that both sexes gain by the restraint which they impose on each other, and that the difficulties which arise from differences of mental constitution and physical strength are greatly exaggerated.

It is evident, however, that *à priori* arguments count for very little in settling a question of this sort. Neither can we regard the experience of other countries as a serious argument one way or another, since social conditions vary greatly in different countries. We can only await the results of the various interesting and careful experiments in co-education that are now being carried out in England and Wales.

REFERENCES

On home education and the relation of home to school Miss C. M. Mason's *Home Education* claims attention; as also does the work of the "Parents' National Education Union," with its organ, *The Parents' Review*. See also *Work and Play in Girls' Schools*, pp. 367-373.

On the general question of differentiation of types of schools, see J. J. Findlay's *Principles of Class Teaching*, chap. iv.; M. E. Sadler's *Problems in Prussian Secondary Education*, and various other articles in *Special Reports*; *Report of Royal Commission on Secondary Education*, vol. i., especially pp. 136-143. On the effects of recent reorganisation of schools in Britain, see Raymont, *Modern Education*, chap. v.

On the co-education of boys and girls see the volume *Co-education*, edited by Miss Alice Woods.

CHAPTER IV

EDUCATION AND THE STATE

'What does the State exist for? . . . For my own part I think this is a point at which we may well say 'Back to Aristotle'. The minimisers tell us that the State exists only for protection. Aristotle tells us that it was founded on the need for protection, but exists for more than protection—γηνομένη μὲν οὖν τοῦ ζῆν ἕνεκεν, οὖσα δὲ τοῦ εὖ ζῆν. Not only material security, but the perfection of human and social life, is what we aim at in that organised co-operation of many men's lives and works which is called the State''—Sir F. Pollock.

The true functions of the State, and in particular the proper relation between State activity and private enterprise, have long been a favourite theme of discussion and controversy among publicists. A lengthy treatment of the subject would, of course, be out of place in this book; but there are certain points that claim the attention of the student of education, because of the light they throw upon the settled policy of modern civilised States with regard to the establishment and control of school systems.

Individualism.

Our own country can look back upon a long line of writers upon the theory of politics, reaching from Hobbes, the father of modern political theory, through Locke, Adam Smith, Bentham, and J. S. Mill, to Herbert Spencer. In some respects these writers are as far asunder as the poles, but in one essential respect their doctrines coincide. They differ widely in their accounts of the origin of society, and in their views of the relation of individuals to society after the latter has been formed; but they agree in assuming the individual as the primary fact, from which society has somehow to be deduced. Hobbes, basing his doctrine on an unhistorical and fantastic notion of an original "social contract," whereby every one surrendered himself to the

will of all, in return for receiving the protection of all, held that the ruling power should have absolute sway. Locke, whose political theory is practically an apology for the Revolution of 1688, revised the notion of an original compact, holding that primitive men submitted themselves to the community, not in an absolute sense, but only for certain definite purposes, and he infers that a moderate constitutional government is the only one justified by natural laws. Adam Smith accepted the current notion of an original social contract, but, like the French thinkers by whom he was influenced, he used it to prove the exact opposite of that which Hobbes had deduced from it. He held strongly to that doctrine of "natural liberty" which has since been summed up in the expression *laissez-faire*, and he grudgingly admits exceptions to this rule. For example, he is in favour of State-controlled elementary education, in order that the deteriorating effects of division of labour may be counteracted; but he hardly disguises his disapproval of State interference in higher education. In the political theory of Bentham, society is deduced, not from the pliant fiction of a social contract, but from the principle of utility; the State exists simply in order to further the happiness of the individual citizen, by securing to him the privilege of doing what he likes, so far as that is compatible with other individuals doing the same; in itself the State has no moral significance, and, except for the purpose indicated, had better obliterate itself as far as possible. J. S. Mill expounds the same theme in some of the most eloquent and attractive portions of his writings. The individual is sacred, and the interference of government with his liberty is to be watched with an extremely jealous eye. Mill recognises certain necessary functions of government, such as those relating to taxation, the judicature, and police. The rest of its functions are optional, and with respect to these *laissez-faire* should be the general rule, every departure from which, unless required in order to some great good, is a certain evil, because it interferes with individual liberty, it increases the power and influence, the occupations and responsibilities, of government, it lacks the strong personal interest of private agency, and it weakens the training of the people in practical affairs. He makes, however, a long

list of exceptions to the rule, and prominent among these is education. On grounds of expediency, State intervention is here, he says, necessary, because the consumer is not a competent judge of the commodity. Schools and colleges should therefore be provided by the State, and elementary education should be made compulsory; but there should be no monopoly, and no discouragement of private teaching. As Mill's position is associated with the democratic movement of his time, so is Spencer's connected with recent advances in science. According to Spencer, the secret of progress lies in the struggle for existence. If an animal or a vegetable fails to develop those qualities that enable it to maintain the struggle, it perishes, and so also must a member of society. The business of the statesman is merely to maintain the order necessary to systematic conflict; his interference must extend only to seeing fair play between the combatants. Hence Spencer protests against burdening the strong to support the weak, and he looks askance at the whole movement towards ameliorating social conditions by compulsory legislation on such matters as work in factories, public health, libraries, schools, and so on. In fine, there has been a strong tendency amongst English political thinkers from Locke to Spencer towards distrusting the intervention of the State beyond the absolutely necessary limits, though opinions have differed considerably as to how far those limits should extend.

Collectivism.

But fortunately this is not the whole story. For though Adam Smith and his followers have exerted a powerful influence upon political thought in this country, yet their opposition to State intervention has not passed unchallenged. When, for example, Matthew Arnold was earnestly impressing upon his countrymen the responsibility of the State in regard to higher education, he was able to quote with telling effect the noble protest of Edmund Burke that the citizens of a State, the members of a society, are really a partnership—"a partnership in all science, in all art, in every virtue, and in all perfection". Carlyle and Ruskin, too, have vigorously denounced the *laissez-faire* creed. Moreover, it has in recent times been very practically recognised that the State has other functions than that of prevent-

ing individuals from interfering with one another's rights; that, in point of fact, the true function of a State is, by positive as well as by negative means, to make the most and the best of the individual, or rather (and the difference is important) to aid him in making the most and best of himself. The principle of unlimited competition has been set aside, and that of co-operation, with its necessary corollary of restraint on individuals, has been substituted. No doubt the danger exists of weakening here and there the sense of personal responsibility, and no doubt the State needs watching, because it is apt to undertake tasks which it does not understand and cannot efficiently perform. To prove that State intervention has its drawbacks would, as Sir J. F. Stephen has said, be as superfluous as to show that a surgical operation has bad effects. Still, the broad principle remains that it is the duty of the State, by all practicable and promising means, to seek to raise its citizens to a higher plane of life. Thus we find that a modern civilised State does not stop short at providing for national defence, for the conduct of its relations with other States, for the repression of crime, and the administration of civil justice. It aids in the production of wealth by retaining control of certain instruments too important to be entrusted to individuals, such as the high-roads and the postal system. It aids in the just distribution of wealth by graduating its taxes, and by relieving the distress of its poorest citizens at the expense of the rest. It protects the health of the people by enforcing efficient sanitary measures and by penalising the adulteration of food. It encourages mental culture by providing public libraries, by maintaining picture galleries, and in some cases by subsidising first-rate dramatic and musical performances. And, to come to our immediate question, it facilitates the education of its citizens, and makes elementary education compulsory and free. In a word, the principle of unrestricted competition, which means victory to the strong and death to the weak, has been definitely abandoned; and the power of the State to help forward the moralisation of the individual has been abundantly recognised. The very conception of society as an organism, which Spencer did so much to elucidate, has set men thinking that society determines the individual as much as the individual

determines society. The individualist position has been successfully assaulted by means of a weapon taken from the armoury of its stoutest defender.

Growth of State intervention in education.

Descending from these generalities to the special question before us, we observe that education, like the other beneficial influences at work in a civilised community, may be conducted by all or any of three means; first, by voluntary effort with a view to profit; secondly, by voluntary effort arising from philanthropic or religious motives; thirdly, by the agency of the State. In historical order, voluntary effort of course takes precedence of the agency of the State, but State intervention has come about at very different rates in different countries. During the Middle Ages, such schools as then existed were dependent on the Church, which provided teachers, met expenses, and settled the aims and ideals of education. In Germany, State intervention began with the Reformation; and in the second half of the sixteenth century two of the reformed States, Würtemburg and Saxony, organised complete educational systems, though the schools remained in close connection with the Church. In the next century, the Thirty Years' War set back the clock; but in the eighteenth century effective control and direction of the schools was gradually established in the Protestant States. Würtemburg and Saxony revived their former systems, and similar measures were taken in Hanover under George II, and in Prussia under Frederick the Great. The year 1806 saw Prussia prostrate at the feet of Napoleon, and every student of history knows how great a part the reconstruction of her educational system played in the retrieval of her fallen fortunes. In France, as in other Catholic countries, State intervention was much longer delayed. Until the Revolution, primary instruction was practically non-existent, and the higher schools were a bone of contention between the Church and the Government; but the Revolution swept away the old order of things and established a rigorously centralised system of instruction. In Scotland, as in Germany, the national organisation of education began with the Reformation: what Luther did for Germany, John Knox

Germany.

France.

Scotland.

did for Scotland. Very different was the immediate effect of the Reformation upon the schools of England, and the reason for the difference doubtless lies in the fact that, whereas in this country the movement of reform came from above, in Scotland it came from below, the necessities of the people being foremost in the minds of the Scotch reformers. The suppression of the old religious foundations, and the neglect on the part of English statesmen and reformers to follow the example of other reformed states in the establishment of a national system of schools, caused English education to sink to a lower level than before; the middle classes were badly provided for by means of endowed grammar-schools, a few of ancient and some of later date, and the poorer classes were not provided for at all. In the eighteenth century, voluntary effort took such shape as parochial charity schools and the circulating schools of Wales. The first quarter of the nineteenth century was the epoch of educational societies, pre-eminent among which stood the British and Foreign School Society and the National Society. In 1833 the first real step towards State intervention was taken, when Parliament made its first grant for educational purposes; and six years later, a central authority, confined, however, to elementary education, was established. In this rapid sketch we cannot trace minutely the growth of State intervention in this country; suffice it to say that the central authority worked in strict connection with the voluntary societies, which through the zeal of the churches increased in number and influence, and that the great Act of 1870, which made elementary instruction compulsory, reaffirmed the principle of co-operation between the State and voluntary agencies, and confined the function of the former to supplementing the latter. The general effect of the establishment of school boards was a vast extension of purely State-controlled education, though the voluntary principle, so far as it was due to the activity of religious bodies, suffered no abatement. Thus, when Parliament came to deal with education in 1902, a complete system of primary education was in operation, and it only remained to raise the level of efficiency in the so-called voluntary schools. Up to this time the State had not touched secondary education except

England.

incidentally by conferring powers on the Charity Commissioners, by offering grants through the Department of Science and Art, by permitting school boards to establish higher grade elementary schools (which were in fact secondary schools as regards the more advanced part of their curricula), and by encouraging county councils to provide technical schools. An act of 1889 had led to the establishment of a secondary school system in Wales, but it was not until 1902 that English secondary education was comprehensively dealt with—nearly a century after the highest knowledge and best ability of Prussia had been brought to bear upon the same question as it affected that country. Faithful counsellors like Matthew Arnold had not been wanting, but they had remained voices crying in the wilderness until the opening of the twentieth century, when at length the pressure of commercial rivalries forced the problem upon the attention of English statesmen.

Place of voluntary effort in education.

We have now illustrated, sufficiently for our purpose, the gradual supersession of voluntary agency in education by that of the State. Even in laggard England, it has now long been recognised that philanthropic motives, even when combined with religious zeal, are not enough to rescue the masses of the people from the evils of ignorance and defective training; and so the organisation of primary education is an accomplished fact. One of the chief reasons for the long delay in regard to secondary education is that the distinction of primary and secondary has been falsely, or at least inadequately, identified with a distinction of social classes. Primary education has been thought of as being for the poor, who cannot pay for it, and secondary education for the "middle classes," who can pay. It has therefore been thought that the latter should be left partly to private institutions conducted in the ordinary way of business with a view to profit, and partly to the help afforded by endowments. "But the new point of view is that it is the business of the State to keep open the ways of intellectual opportunity from the bottom to the top of the national system of education, in order to secure as much as possible of the advantage which accrues to the community from making the best of great abilities, however humbly born. Those who take this view cannot rest satisfied

with the refusal of Government aid to secondary education. They regard the latter as being, in part, a necessary outcome of the extension and improvement of secondary schools. And, therefore, they claim for it State supervision and a measure of State aid. Thus by a sort of capillary attraction the idea of State intervention rises up from the level of elementary education, to which Adam Smith would have confined it, to the higher stages of instruction, secondary and academic."[1] At the same time, we must remember that State intervention in higher education is by no means inconsistent with the continuance of proprietary and private schools, whenever such schools can give evidence that they are good of their kind. Reformers differ considerably in their views of the treatment of private schools; but the opinion of the Secondary Education Commission of 1895 will probably continue to carry conviction to most minds, that the State should be content with a plan of limited supervision, which "will, if wisely used, stimulate and guide private effort, and secure for parents a certain guarantee of efficiency," but which "will not trench upon any man's freedom, nor secure to public schools a monopoly which might be prejudicial to ultimate progress".[2] The State should prevent woefully inefficient private schools from imposing upon ill-informed or easy-going parents, just as it prevents butter merchants and quack doctors from taking advantage of the ignorance or credulity of the average citizen. On the other hand, efficient schools which are not controlled by public authorities may fulfil a valuable function in helping to check the tendency towards a stereotyped system, and in offering a field for educational experiment.

What the State can, and what it cannot, do for education.

The long struggle for effective State intervention, which has only recently culminated in a comprehensive measure of reform, is apt to blind Englishmen of this generation to the fact that even now, at least as regards higher education, their work is only just begun. For, after all, what has been said of human affairs at large is

[1] M. E. Sadler in the *Journal of Education*, Jan., 1904.

[2] *Report*, vol. i., 294. See also Dr. Wormell's memorandum "On the Contributions of Private School Teachers to the Improvement of Educational Methods" in vol. v., p. 14.

eminently true of education; "that part which laws or kings can cause or cure," though highly important, is but small. The State can at most provide only good machinery; but the best of machinery, unless it be placed in skilful hands and directed by trained intelligence, may produce a very indifferent article. The pivot upon which an educational system works is the personality of the teacher. Educational salvation lies, not in bricks and mortar, nor in sumptuous equipment, nor in paper curricula, nor in elaborate machinery of whatever kind, but in the subtle influence of informed and cultured men and women upon the pupils committed to their care. A good teacher, in sympathy with his work, and doing it under reasonably liberal conditions of service, will achieve better things in a barn than a bad or dissatisfied one will achieve under the best of external circumstances. But this, of course, forms no excuse for failure on the part of the State to discharge its functions. In what ways, then, can the State effectively promote the cause of education? In the *first* place, all who believe in the State as an instrument of good contend, and many individualists are ready on grounds of expediency to allow, that the State should provide schools of different kinds—primary, secondary, and technical—suited to the needs of each locality, and so co-ordinated as to prevent needless multiplication of effort. And when we regard the State, not simply as an aggregate of persons, but also as itself a sort of person, competing with other similar persons in commerce and in general advancement, the argument for a State supply of schools is tremendously reinforced. In the *second* place, having provided the means of education, the State should, on the same grounds, compel careless or ignorant parents to live up to their privileges, at least to the extent of requiring that every child shall go through the primary course. Whether, as in Saxony and other German States, compulsory attendance at continuation schools should be exacted from boys during the few critical years following the age of fourteen, may here be left an open question: clearly the difficulties would be greater in countries less inured to State interference of the drastic sort. A *third* function of the State with

Its functions are: (1) To provide suitable schools.

(2) To make education compulsory up to a certain point.

reference to education is that of determining how the expenses of the system thus created shall be met, and in particular what portion thereof shall be borne by the parents of the pupils. Upon this point as many varieties of opinion are possible as there are shades of difference between extreme socialism and uncompromising individualism. There is certainly much force in the argument that by cheapening education excessively we may diminish the sense of parental responsibility, and so inflict an indirect injury. Free primary education, for example, means that the child gets for nothing that which costs the country two or three pounds a year; which is good for the child, and in the long run good for the State, but is not an unmixed benefit to the parent. This, however, is a question of expediency, and of weighing advantages against disadvantages. The logic of events in most civilised communities has decided that free primary education is on the whole the best arrangement. As regards secondary education, our own country is as yet prepared to go no further than to meet a portion of the cost out of public funds, and to provide scholarships by means of which the able children of poor men may have their ability made available in the service of the community.

(3) To determine how the cost shall be met.

A *fourth* educational function of the State is that of assuming the general control and direction of the school system. The extent to which public authorities should take to themselves powers under this head is an extremely important question. In our subsequent discussion of curricula, for example, we shall see reason to conclude that the selection of studies is, in a broad sense, the affair, not of teachers alone, but of the whole community acting through its appointed authorities. When, however, a detailed official programme is imposed, the consequences may be disastrous, as those know who have been in touch with the primary schools of this country during the last twenty years. The State, acting, it is to be presumed, through a few imperfectly informed officials, for many years prescribed a course which had the mischievous effect of spreading a distaste for manual labour, even of the skilled varieties, and of swelling the army of ill-paid clerks. One of

(4) To assume general control and supervision.

the most significant reforms ever introduced into these schools was the substitution, for the detailed scheme, of an outline scheme which left large powers of discretion to local managers, who in their turn usually leave considerable powers to the teachers. The case is clearly different when, as in the construction of the programmes for the higher schools of Germany, the whole subject has traditionally been regarded as one of national concern, and as one upon which enlightened opinion should be gathered from all quarters. Even under these conditions, however, the policy of fixed programmes may well be called in question; and the Report of the American Committee on Secondary School Studies may be cited on the side of suggestion as contrasted with coercion.

When we pass from curricula to methods of teaching, the function of the State is still more limited, for here, if anywhere, the liberty of the teacher should be absolute. The State performs a valuable service when, after consulting the best available opinion, it disseminates information concerning improved methods; beyond this point, State interference in the details of teaching is fraught with danger. Nowhere is this danger more forcibly illustrated than in the attempts of public authorities to estimate the quality of the teaching by means of examinations—a subject upon which the well-known example of the English primary schools is again full of instructive warning. The question of public examinations is, however, of such capital importance that it will be dealt with separately in a later chapter. What we are here concerned to note is that the best guarantees of educational efficiency lie in requiring teachers to possess a sound education, in training them in the theory and practice of their art, and then in giving them the utmost liberty compatible with the duty of the authorities to deal with such cases of incompetence as may here and there arise.

(5) To insist on well-equipped teachers.

We are thus led naturally to the next of the State's functions in regard to education—that of seeing that suitable provision is made for a regular supply of efficient teachers. Upon the general importance of this question nothing needs to be added to what has been already said, except that, however thoroughly and liberally public authorities discharge their duties in other respects, all is in vain

unless the ranks of the teaching profession, in its various grades, are so recruited that the daily work of the schools is done with knowledge, skill, and sympathy. To have built schools, to have filled them with pupils, and to have devised means of supervision, are all excellent things in themselves—as machinery. It is the teacher alone who can supply the driving power. And it is the business of the State, by providing the means of training, with or without the help of the universities, and by establishing an effective system of registration, to see that the requisite power is forthcoming.

Central and local authorities.

We have hitherto spoken of the functions of the State with regard to education, without reference to the usual division of power between central and local authorities. Upon the general question of central and local government, it has been well said that "the distribution of power between central and local authorities is a matter calling for the exercise of political judgment. It is for the central government to mark out the limits within which inferior bodies are to act, and the general principles which are to guide them. Within their own sphere, local authorities must have a certain measure of independence, a certain liberty in trying experiments on their own responsibility. This is not a question which admits of very definite treatment. There is a time to centralise, and a time to decentralise; it is the business of statesmen and municipal leaders to see that both principles are kept in view in arranging the machinery of government."[1]

Germany and America contrasted.

How differently, however, the respective functions of central and local authorities have been marked out in different countries, is illustrated in the cases of Germany and America. Speaking generally, and disregarding minor exceptions, the educational systems of these two states stand in striking contrast to each other. "In Germany," writes Mr. Sadler, "the masses of the people have very little to do with determining the course of educational policy; in America, nearly all education rests on popular control. In Germany, edu-

[1] Raleigh, *Elementary Politics*, p. 53.

cational progress is guided by administrative order; in America it depends much more upon free discussion. In Germany, as a rule, the keys of the position are in the hands of a strong central authority; in America, there is very great local freedom. Germany (and Prussia in particular) has a strong tradition in favour of direct State management of industrial and other concerns; in America (with considerable exceptions) the tradition is the other way."[1] In these respects, as in others, England would appear to be feeling her way to a middle position between the German and American ideals, by seeking to derive the advantages both of effective central supervision and of large powers of local control.

In noting these points of contrast, however, we must bear in mind that we have here no question of absolute good and bad, but of what is good and what is bad relatively to the genius and traditions of the nation concerned. The problem of finding the right point of balance between central and local authority in education must necessarily bear some analogy to the same process of adjustment in other departments of administration. In a country where centralisation is the general tendency, political judgment would not be likely to incline to decentralisation in education. Nevertheless, it will be instructive to consider how each of these opposing ideals tends to affect educational progress injuriously, unless it be leavened with the best elements of the other.

Tendencies of centralisation and of decentralisation.

What, then, are the characteristic weaknesses of a centralised and of a decentralised system respectively, which it should be the business of statesmen and administrators to avoid? The one tends to a lifeless uniformity of curriculum and organisation; the other, unless it be checked by supervision from above, tends to needless and bewildering diversity. The one, guided by what is sometimes derisively called "the official mind," is apt to place too high a value upon uniformity, merely because it leads to simplicity of administration; the other is apt to forget that there is a sort of uniformity worth striving for, namely, that which depends upon

[1] "A Contrast between German and American Ideals in Education" (see *Special Reports*, vol. xi.).

the essentially unvarying character of educational principles. The one is slow to adapt itself to local circumstances; the other needs to be reminded that there is a national, and indeed a universal, as well as a local, aspect of education. The one tends to stagnation, or at least to excessive caution in the introduction of reforms; the other, from the very facility with which changes can be effected, tends to restlessness, to desire of change for its own sake, and to eager and even reckless experimenting.[1] The one tends to remove the schools so far from local influence that one of the best guarantees of progress is sacrificed; the other tends, unless the administrative areas are sufficiently large and important, to the undue mingling of educational with other local concerns, even to the extent of involving the schools in the turmoil of local strife and jealousy, whether personal or political or religious. The one lends itself readily to the usurpation by the central authority of functions that ought to be shared with the local community and the family; the other, whilst it brings education home to "men's business and bosoms," sometimes does so at the cost of petty interference with the teachers. Under the one system, the dignity and the favourable conditions of service incident to an appointment under the central authority tend to attract able men to fill administrative posts, who, however, unless local criticism can be made effective, are apt to work in unchanging grooves; under the other system, unless again the local areas are large, power is apt to get into the hands of incompetent persons. The one system tends to leave little room for originality and individual initiative, since the school officials are mainly engaged in carrying prescribed regulations into effect; the other may in numerous cases leave room for mere caprice and eccentricity, unless a steadying and moderating influence is brought to bear by the officials of the central authority.[2]

[1] For example, shortly after these words were written, an important county education authority passed and rescinded, within a few weeks, a resolution excluding children under five years of age from the primary infant schools.

[2] On the relative advantages of centralisation and decentralisation, see an article by C. H. Thurber in the *Pedagogical Seminary*, Sept., 1901.

The above considerations seem fairly to lead us to two broad conclusions regarding the right distribution of functions between the central and the local authority. First, the central authority should be strong enough to secure sufficient unity of general aim, but not strong enough to impose a paralysing uniformity of organisation and curriculum upon the whole of the schools of the country; strong enough to prevent incautious haste, but not strong enough to act as a permanent drag on the wheel. Secondly, the areas of local administration should be large enough to prevent, as far as possible, the undue intrusion of personal and local prejudices in educational affairs, and especially in the appointment and dismissal of teachers—an evil which was formerly widespread among the smaller school boards of this country. Sufficiently large local areas will further ensure that some of the best talent of the country shall be enlisted in the administrative service of authorities.

Conclusion.

REFERENCES

The student who desires to pursue further the subject of this chapter would do well to master the elements of political theory. Raleigh's *Elementary Politics* (1890), F. C. Montague's *Limits of Individual Liberty* (1885) and Pollock's *History of the Science of Politics* (1890) will serve well as an introductory course.

G. Balfour's *Educational Systems of Great Britain and Ireland* gives a comprehensive account of general education in the United Kingdom during the nineteenth century. Montmorency's *State Intervention in English Education* (1903) deals with its subject historically from early times to 1833. The same writer's *Progress of Education in England* brings the historical review down to the year 1904. State intervention in German education has been dealt with by Dr. J. E. Russell in his *German Higher Schools*, and by M. E. Sadler in the reports previously quoted. Matthew Arnold's reports on foreign systems of education are, it need hardly be said, of permanent interest.

PART III

THE SUBJECT OF EDUCATION

CHAPTER V

THE STUDY OF CHILDREN

" Voilà l'étude à laquelle je me suis le plus appliqué, afin que, quand toute ma méthode serait chimérique et fausse, on pût toujours profiter de mes observations. Je puis avoir très-mal vu ce qu'il faut faire; mais je crois avoir bien vu le sujet sur lequel on doit opérer. Commencez donc par mieux étudier vos élèves; car très-assurément vous ne les connaissez point "—ROUSSEAU.

The need of knowing the person to be taught as well as the thing to be taught was seen by Plato,

" THE NEW Education " has obtained currency as one of the stock phrases of English pedagogic literature, especially, perhaps, since the late R. H. Quick so admirably summed up the articles of faith which the expression connotes.[1] The phrase is accurate enough for practical purposes, though we must note that the novelty of these articles of faith lies chiefly in the fact that during the nineteenth century they were more effectually taught and more widely accepted than before. That every child should be educated, that the education of girls is as essential to social well-being as that of boys, that the State should assume the supervision of its schools, and that instruction is not a mere affair of books,—all these truths had been pressed home by the reformers of previous centuries, though only in modern times have they become living forces in the progress of mankind. The most important item in the programme of " the new education "—the one that implies many of the rest—is that the educator should keep in view not only what sort of person he wishes the child to *become* in later life, but also what manner of person the child *is*, here and now. This creed is, in a sense, at least as old as Plato. The *Republic*, in which he discusses education as part of the larger question of the welfare of society, contains an elaborate account of " the main elements of

[1] *Educational Reformers*, pp. 411-2.

that human nature for which, as he conceived, it was the function of education to provide nurture". For him, the study of the being to be educated is an essential part of the study of education. "He believed that neither a State nor an individual can undertake to educate in a systematic way, unless they start with some idea, not only of what they wish to teach, but also of the living being to whom the matter to be taught is relative, and upon which the given character is to be impressed".[1]

and by Rousseau, Pestalozzi, and Froebel in modern times.

In modern times we find the first strong plea for the study of the child in the pages of Rousseau; and it is this plea which makes the *Emile*, with all its violent paradoxes, one of the greatest books on education ever written. "I wish," says Rousseau, "that some discreet person would give us a treatise on the art of observing children—an art which would be of immense value to us, but of which fathers and schoolmasters have not as yet learnt the very first rudiments".[2] The year of the publication of *Émile* and *Le Contrat Social* found Pestalozzi a young student at Zurich, in warm sympathy with the party which opposed the public condemnation of Rousseau's writings; and this early influence is traceable, not only in Pestalozzi's subsequent career, but also in his ardent belief that an important factor in education had hitherto been insufficiently considered—the child himself. If the traditional idea of education, as a process of filling the mind with knowledge, was to give place to that of developing an organism, then the laws of development must be ascertained and adhered to. With equal enthusiasm, and with greater philosophic insight, Froebel taught that each period of life is to be regarded, not simply as a means to something beyond, but also as an end in itself; that "the boy has not become a boy, nor has the youth become a youth, by reaching a certain age, but only by having lived through childhood, and, further on, through boyhood, true to the requirements of his mind, his feelings, and his body"; and that "similarly, adult man has not become an adult man by

[1] Nettleship, "The Theory of Education in Plato's Republic," in *Hellenica*, p. 87.

[2] *Emile*, bk. iii.

reaching a certain age, but only by faithfully satisfying the requirements of his childhood, boyhood, and youth ".[1] The adaptation of our measures to the capacities and interests of the pupil at successive stages of his growth, the need of which Froebel saw so clearly, cannot be effected without some knowledge of the pupil's nature.

Extra-pedagogic influences.

The " renaissance of the child " witnessed by the nineteenth century has not been due entirely, however, to Pestalozzi and Froebel, nor to any other pedagogic influences, but partly also to a still more general tendency towards a milder and more humane *régime*. A movement which has called into existence societies for the protection of those who cannot protect themselves—of animals, infants, and persons of unsound mind—could hardly have failed to modify the school system of a former generation, with its ill-adapted curricula, its toilsome feats of memory, its harsh punishments, and its inability to see in childhood anything but a time of direct preparation for the pursuits of adult life. And so we frequently find writers of high repute, past whom the stream of thought connected with the names of Pestalozzi and Froebel probably flowed almost unnoticed, powerfully advocating the same cause that those reformers had at heart. As a plea for the greater consideration of the child, it would not be easy to match, even from the professed literature of pedagogy, the following passage from the pen of the late Mr. Lecky: " There is such a thing as looking forward too rigidly and too exclusively to the future—to a future that may never arrive. This is the great fault of the over-educationist, who makes early life a burden and a toil, and also of those who try to impose on youth the tastes and pleasures of the man. . . . Many a parent, standing by the coffin of his child, has felt with bitterness how much of the measure of enjoyment that short life might have known has been cut off by an injudicious education. And even if adult life is attained, the evils of an unhappy childhood are seldom wholly compensated. . . . An early overstrain of our powers often leaves behind it lasting distortion or weakness, and

[1] *Education of Man*, § 22 (Hailmann's edition).

a sad childhood introduces into the character elements of morbidness and bitterness that will not disappear."[1]

Scientific interest in childhood.

Besides the practical motives which we have considered above, there remains to be noted the theoretical interest which has led men of science also to investigate different phases of child life. The application of the theory of evolution to biological problems, and, in particular, the doctrine that the history of the individual organism is an epitome of the history of the race, clearly calls for all that can be certainly affirmed regarding the child's development. Psychology, too, having analysed the contents of adult consciousness, and ascertained as far as may be the laws of mental growth, recognises the need of verifying its results by reference to the observed facts of juvenile progress. Again, the science of physiology has added immensely to our general knowledge of the child's physical growth and, what is of especial value, of the effects of mental effort upon the developing nervous system. Not all of the results attained in these different ways are, of course, equally relevant to educational problems, but the indirect aid from strictly theoretical quarters is powerfully influencing the child-study movement. This is fortunate, not only because accurate knowledge of the facts of child life is thus extended, but also because there is need of introducing the truly scientific spirit into these investigations. From much that passes under the name of child-study, that spirit is singularly absent.

Methods of child-study.

Let us agree, then, that the teacher ought to concern himself with the pupil to be instructed and trained, as well as with the instruments of instruction and the object of training, and, postponing for the moment the question how far the teacher as such need be acquainted with the somewhat alarming mass of material which is being accumulated by students of childhood, and with the laborious methods by which that material is collected and sifted, let us take note of the chief heads under which these may be grouped. The first method is that of making careful records of individual children, either of a comprehensive character or with reference to some special line of development.

[1] *The Map of Life*, p. 223.

Such records, while deeply interesting to those immediately concerned, and very suggestive to others, must clearly be used with caution. We must be on our guard against arguing from the special to the general case. Among the most noteworthy of them are Darwin's "Biographical Sketch of an Infant,"[1] Preyer's *Mind of a Child*, Sully's "Extracts from a Father's Diary"[2] and Miss Shinn's *Notes on the Development of a Child*. Akin to these individual accounts are the attempts which have been made, on the basis of such records, to bring together in one view the general results of each particular class of observations, *e.g.*, those upon language, imagination, children's drawings, and their early reasonings. In this category we should place Sully's *Studies of Childhood*, Tracy's *Psychology of Childhood*, and Compayré's *L'Evolution intellectuelle et morale de l' Enfant*. Unfortunately, systematic observations of the kind here noticed have so far been carried out only in reference to early childhood, and chiefly in reference to the first two or three years, so that their value to the teacher is only indirect, though in some respects very real.

Accounts of observations upon children sometimes assume a statistical form, and a great deal of enthusiastic labour has been expended upon this sort of investigation. We may at once put aside as irrelevant to our purpose all those results which do not bear upon the practical business we have in hand. It is doubtless interesting enough in its way to find that out of 845 children exactly 191 preferred wax dolls; 163, paper dolls; 153, china dolls; 144, rag dolls; 116, bisque dolls; 69, rubber dolls; and so on: and that out of 356 love-poems composed by boys, only 91 refer to the young ladies' eyes—50 to their expression, and 41 to their colour, blue leading with 22.[3] All this is no doubt excellent anthropology, just as would be a statistical estimate of the preferences of adults as regards dancing, whist, and ping-pong; but its pedagogic importance is equally unimpressive. On the other hand, it is no less instructive than interesting to learn that when a large number of children were asked to define the names of

[1] In *Mind*, vol. ii. (1877). [2] *Studies of Childhood*, chap. xi.

[3] *Pedagogical Seminary*, vol. iv. (Quoted by H. Munsterberg in *Psychology and Life*, p. 114).

certain well-known objects, 80 per cent. of the definitions given by those between six and seven years of age indicated the use or function of the object (*e.g.*, "a clock is to tell the time") rather than its form and substance, and that this percentage dwindled to thirty-one in the case of boys and girls of fifteen. Similarly, the results of Dr. Stanley Hall's investigations regarding "The Contents of Children's Minds on entering School,"[1] are suggestive to those who teach young children. Even, however, where statistical inquiries bear pointedly upon the education of children, we must remember that they are to be received with great caution. It is obvious, in the first place, that if statistics are to be of any value, the trustworthiness of the data must be unimpeachable, and their range must be sufficiently wide. Equally important is the right interpretation of statistics, for there is always a danger of reading into them conclusions which, when the data are closely scrutinised, are seen to be unwarranted. When children are asked, for example, to say what great personage they would most like to be, or what occupation they would best like to follow, we must not conclude that the tabulated answers indicate settled preferences; they will probably represent a large number of passing moods, influenced in a variety of accidental ways. Finally, we must bear in mind that the utmost use of statistics, however carefully collected and interpreted, is to suggest empirical rules and conclusions, which may or may not be verified by further experience.

We come now to the more tangible contributions of physiology and anthropometry to the study of childhood. Some of these results, like those noticed above, are in the form of elaborate statistics, whose value must, of course, be tried by similar tests. There can be no doubt, however, of the utility of the tables which set forth, regarding boys and girls of different ages, the average weight and height, the average chest-girth, and the variations of these figures as between different social classes. Physicians who have given special attention to the subject have also supplied teachers

[1] *Pedagogical Seminary*, vol. i.

and parents with valuable hints on the physical observation of children, on the simple means of testing the organs of sight and hearing, and on the signs of abnormal development and of nervous derangement, as exhibited in the general build and balance of the body, facial expression, the movements of the eyes, and the positions of the outstretched hands. They have also dealt experimentally with the conditions of mental fatigue[1] and the cost of mental effort; and the results attained have a real bearing upon such questions as the length and succession of lessons, and the amount of food, sleep, and fresh air required. To those who refused to be convinced in any other way, they have demonstrated by facts and figures that it is both a blunder and a crime to goad the half-fed and scantily clad children to be found in some of our primary schools into the same degree of mental activity as that displayed by their more fortunate fellows, and to require the weaklier pupils in our higher schools to perform tasks at home which keep them busy till bed-time.

The teacher's use of child-study.

The reader of this brief account of the principal methods of child-study will have perceived that a vast field of inquiry is opened out, many portions of which are of little direct concern to him, and it may be well to administer the caution that in pursuing the study he may easily be led into unprofitable by-paths. Let him not suppose, for example, that, in order to prove his mettle as a teacher, he must join the numerous band of persons who collect children's writings and sayings, and calculate the percentage of those who exhibit this or that peculiarity. Let him remember, too, that "the value for educational purposes of the mere presentation of unrelated facts, of anecdotes of child life, or even of particular investigations into certain details, may be greatly exaggerated. A great deal of material which, even if intelligently collected, is simply data for the scientific specialist, is often presented as if educational practice could be guided by it. Only *interpreted* material, that which reveals principles or suggests lines

[1] *E.g.* Binet and Féré's experiments as to the effects of mental work upon the rates of respiration and pulsation. See also ch. xiv. below.

of growth to which the educator has to adapt himself, can be of much practical avail."[1]

To attempt an adequate survey of the field of relevant child-study would be inconsistent with the plan of this work. It is necessary, however, at this point, to trace in brief outline the course of the normal child's development through the period, longer or shorter, of his attendance at school. In tracing this development, we must, for the sake of clearness, divide school life into periods, but it will at once be understood that such a division must be more or less artificial, and must depend largely upon the point of view. The periods fixed upon would probably differ according as the division is based upon the child's physical, intellectual, linguistic, artistic, or moral progress.[2] Furthermore, whatever divisions are adopted, we must remember that they are not sharply separated from one another. Development is a continuous process; there are no gaps. The various physical and mental functions, as they successively appear, ripen and pass into higher functions. This principle—the principle of transformation, as it has been happily called—is strikingly exemplified in the gradual stages by which a small child learns to walk. This form of activity seems sometimes to appear quite suddenly, so that many parents can recall the very day upon which their child first walked. As a matter of fact, however, it involves a whole series of preliminary accomplishments. In the fourth month, or thereabouts, the child begins to hold his head in equilibrium; a month or two later, he is able to sit upright; still later, he begins to stand alone,—an activity which brings into play muscles which have up to this time been scarcely used; soon after, by a scarcely perceptible transition, he begins to walk, his first staggering steps being often taken involuntarily.[3]

The periods of development.

In a similar manner, all the child's activities, both physical and mental, shade into one another; and the utmost that can be said about the divisions we shall adopt is that they represent "great phases for emphasis, stages of safe acquirement, and outlooks for

[1] Dewey and McLellan, *Psychology of Number*, p. 19.
[2] See A. F. Chamberlain, *The Child*, chap. iv.
[3] Tracy, *Psychology of Childhood*, pp. 100-1.

further growth". On this understanding we may conveniently adopt the following divisions: (1) the first three years, the period of babyhood; (2) to the end of the seventh year, the period which may be called descriptively that of early childhood; (3) to the tenth or eleventh year, the period of later childhood; (4) to the fourteenth year, the period of boyhood or girlhood, and (5) from the fourteenth year onwards, the period of adolescence.

The first three years.

The earliest period has received much attention from competent observers, because of its deep interest, and its importance for psychology and biology. The teacher is not called upon to study it minutely, but it would be a great mistake if any teacher, especially a teacher of young children, neglected it entirely; just as it is a mistake when a teacher of adolescents takes no account of the ways of younger boys and girls.

The most obvious thing that strikes one about these earliest years is the marvellous progress made in the command of the bodily organs, sensory and motor. Apart from random movements of head and limbs, and such reflex actions as sucking, swallowing, blinking, and crying, the new-born child is utterly helpless. Gradually, however, as the result of traces left in the memory by repeated experiences, he learns to adjust his eyes, to judge distances, and to stretch out his hands voluntarily for objects within his reach; and with increasing strength he learns within the first six months to keep his head and trunk upright in the sitting posture. These acquisitions give a powerful impetus to his natural craving for a knowledge of the little world around him. His ability to control to some extent his eyes and hands, and to sit upright, impels him to examine objects, to handle them, to carry them to his mouth, to build them up and knock them down. By the end of the first half of the second year he has gained immensely in power to balance himself, to co-ordinate and control his movements; he has probably passed through the creeping stage and learned to walk. Straightway his world becomes a bigger one; his acquaintance with the things around him, their qualities and their uses, widens, and his native curiosity is thus ministered to. His instinctive tendency to imitate others, which showed itself in the second half of the first year, now takes a

leading place in his development. Through it, for example, his infantile babblings have begun to shape themselves into semi-articulate sounds; he learns to call things by their names, and at the end of the period he has ordinarily made good progress in the use of spoken language. The third year marks an important epoch in the growth of memory. It is then that impressions begin to lose their evanescent character and to become part of the child's permanent mental store. Few can recall anything further back than the third year, and most are unable to go back so far. The long task of intellectually grasping the world around him, of comparing, classifying, and generalising, begins during this period. Armed with a few heads of classification, the child boldly attacks the objects that present themselves; at first every man is "daddy," every large quadruped a "gee-gee" or a "moo-moo," and snowflakes are butterflies.

Early childhood (3-7).

The control of bodily movements which has been acquired in the earlier period enables the child to go still further afield for objects of investigation, and under wise guidance his native curiosity will be busily employed in the observation of the simpler phenomena of nature. His curiosity, coupled with his growing skill in the use of the mother-tongue, also prompts him to an incessant questioning of his elders, so much so that this has been marked off as the questioning age. The words "what" and "why" are continually on his tongue. "What is this?" "What is it called?" "Why is this so?" "Who made this?" These are the verbal forms assumed by the child's thirst for facts and causes. The imitative instinct still looms large in his life, and is of high import, for his moral no less than for his intellectual growth. It shows itself most obviously in his play, the feature of child life rightly fastened upon by Froebel as the leading characteristic of this period.[1] The distinction between work and play—between the free spontaneous activity that seeks no end beyond itself, and the pursuit of a required end, imposed by external authority or by an internal sense of duty—has not yet been brought home to him. The distinction gradually

[1] See *Education of Man*, Hailmann's edition, pp. 54-6.

makes itself felt, as the processes of washing, dressing, tidying up, and going to school take on the form of duties, but in the main this is the period of play. So strong is the dramatic instinct at this age that some children appear to spend a large portion of their waking life in playing parts, imitating their elders, and provoking " the years to bring the inevitable yoke ". Not only dolls and other toys, but also the things appertaining to adult life, are pressed into this service. By " the alchemy of imagination " the most unpromising materials are transmuted to suit their fancy; a bolster becomes a baby, and prodigies of horsemanship are performed on the end of the sofa.[1] The lively imagination shows itself, too, in the child's appreciation of stories, whether of the possible or the impossible sort, and in his greater or less aptitude for inventing stories of his own. His retentive power becomes stronger, and some of his impressions work themselves into connections so firm as to become permanent. He makes progress in his intellectual construction of the world. He is more apt to discern differences amid broad similarities, and the number of his heads of classification has grown much larger, though he may still identify a chamois as a goat, a rhinoceros as an elephant, a beaver as a fish, and a fern as a green feather. If his moral progress has been normal, he becomes less and less at the mercy of impulse, he has imbibed some degree of respect for authority, he has begun to form habits of obedience, and he has learned to control to some extent the more violent and anti-social of the emotions, such as anger.

Later childhood (7-10).

In the next stage the child's physical development proceeds apace; he continues to add about two inches to his stature annually; his brain has completed about four-fifths of its growth, and he enters upon the period of secondary dentition.[2] He leaves the Kindergarten or infant school, and, being now ripe for a clearer distinction between work and play, he goes to school in earnest, though under wise arrangements the step will not be taken abruptly. His interests

[1] *Cf.* R. L. Stevenson, " Child's Play," in *Virginibus Puerisque.*

[2] With which fact is doubtless connected much of the waywardness of this period.

hitherto have been of the native and spontaneous sort, but he must now use these as stepping-stones to the acquired interests of civilised life; in particular, the symbols of language, of number, and of musical expression call for mastery, and usually prove somewhat formidable tasks. In acquiring such arts as reading, writing, and ciphering, he is helped, however, by his growing power to fix his attention on the thing in hand, and to resist the attractions of the various objects that assail his senses. This means, in the language of psychology, that the primitive form of attention which is captured at once by objects that strike the senses is giving place in some degree to apperceptive attention, which is yielded to things that connect themselves with what we already know, and which implies ability to adopt the reflective attitude towards a proposed problem. Again, the child becomes still more retentive of impressions, so that what is now learnt is more apt to become part of his permanent mental stock. It is sometimes said that memory is now at its best, but this is true only in the sense that physiological retentiveness is possibly stronger now than before or after; the adult makes up for this by the logical and other connections of his ideas. The flight of fancy begins to be less unbridled, for, though the child may still revel in fairy tales, he is more apt to require verisimilitude in the stories that he hears, or at least to mark more sharply the possible from the impossible. His wider acquaintance with things helps him to a juster appreciation of their representations, and so his knowledge and interests can be extended by means of pictures, a fact which makes simple geographical and historical instruction now appropriate. His intellectual conquest of his universe proceeds; the vague notions of the earlier periods, when the names of a few broad genera were somewhat wildly applied to widely different species, now become more distinct and accurate. He is no longer content with the word "flower" as applied to a class of objects; he wants to distinguish the various kinds of flowers, and even the different varieties of the same kind. Under proper guidance, his ideas of the objects in which he is naturally interested will thus become less vague and more truly general, for he will continually be led to notice the qualities that differentiate things which seem

alike, and to make a corresponding extension of his vocabulary. With this intellectual advance there will go also, in normal cases, distinct progress on the moral side. The average child of eight or nine has learnt lessons of self-control; he is no longer the creature of impulse and caprice. He can take care of himself in the street, and go to school alone. He no longer follows authority so blindly as before. His moral progress is rather by way of free imitation of his elders, and thus the example of parent and teacher is more than ever important. As in the sphere of thought his ideas are of the pictorial rather than of the abstract order, so in the sphere of morals he works by the concrete embodiment of virtuous conduct, and not by abstract ideas of virtue. His better moral judgments are determined by loyalty to a person rather than to a principle. It is to the people around him, and to the heroes of story and romance, that he first looks for guidance.

Boyhood and girlhood (11-14).

We come now to the period of boyhood and girlhood. Physical growth proceeds almost as before, but whereas in the previous period boys grow a little faster than girls, the position is now reversed; girls at this age grow on the average more rapidly than boys, and for the two or three years following the twelfth year are actually taller and heavier, the difference being due to a check in the growth of boys, and to a considerable acceleration in the growth of girls. Another remarkable feature of this period is that the body becomes capable of being trained for athletic games, the sinews and muscles adding to their energy from day to day under suitable conditions of exercise. "For some reason not well understood, children under the age of twelve or thirteen cannot be trained like older boys for athletic sports. The muscles will not increase in size and harden in the limbs, in short, will not 'train,' and the strength, speed, and 'wind' have not the staying power which might be expected from such exercises".[1] On the mental side, perhaps the most striking thing about this period is the more important part played by forms and symbols in the extension of the boy's interests. He can now read fluently, thinking while he reads and reading while

[1] Dr. C. Roberts in *Report of Commission on Secondary Education*, vol. v., p. 367.

he thinks; and so the printed page, as well as the sensible object and the picture, becomes a source of knowledge and of pleasure. Similarly, if in the preceding period his mind has been stored, by means of pictures and models, with concrete geographical notions, he is now able " to translate the mute symbols of a map into fresh-coloured images of mountain ranges and broad plains, of snow-capped peaks and deep valleys, of rivers and lakes and the boundless ocean, of villages and cities ".[1] He is now at home, too, with the symbols of number; the system of numeration and notation, the common arithmetical tables, and the fundamental processes of arithmetic have become part of his permanent mental store. His greater power of abstraction, and the consequent freedom of many of his ideas from actual sense-impressions, is seen too in his ability to think of words as such, to understand their relations, and to appreciate the meaning and use of grammatical forms. This increasing power of abstraction, and diminishing dependence upon his actual surroundings, are seen too in the widening range of his sympathies, and in the subjects of his moral judgments. Gradually, amid his wider intercourse with his fellows, and with the characters of literature and history, there has grown up a stock of universal rules of conduct—of the types, this sort of action is wrong, that sort is right. The rules by which, at least in his better moments, he governs his conduct, are not yet, however, conceived as parts of a reasonable and self-imposed moral order, but rather as an authoritative code externally imposed. Social and religious sanctions count for more, and the parental sanctions for less. His minor morals begin to be influenced by considerations as to what is " the thing," and what is " good form "; and in weightier matters he begins to appreciate the explicit " thou shalt " and " thou shalt not " of codes like the Decalogue.

Adolescence (14-18).

The time has now arrived when the vast majority of boys and girls leave school and begin the task of preparation for earning a livelihood; a fact which, along with the prominent physical and mental changes that unfold themselves at this period makes it the one that causes greatest

[1] Lange, *Apperception*, p. 81 (Eng. trans.).

anxiety to the social reformer. The rapid physical growth that marked the preceding period is continued till about the seventeenth year, when it gradually falls off until full stature is attained. It is an instructive fact that, though the years from eleven or twelve to sixteen or seventeen are years of rapid growth, and usually of strenuous exertion, whether at school or elsewhere, the body seems to be at its best for resisting disease and death, the death-rate being at its lowest at the age of fourteen. It is therefore probable that the plea so often urged for the relaxation of work during this period, on account of the danger of the boy or girl out-growing his or her strength, has no real foundation, and that such relaxation is desirable only when growth is checked.[1] But besides this increase in height and weight, the momentous changes incident to the passage from childhood to youth now take place; the larynx enlarges, the vocal cords are elongated, the voice is modified, and there are probably equally important changes in the brain, since the shape of the head alters. The higher mental processes become more fully developed, so that the abstractions of mathematics, logic, science, and language, and the more reflective forms of literature, now begin to be comprehended. The youth or maiden begins to live to a great extent in the future rather than in the present. The mind becomes filled with hopes and dreams, passions and cravings. Social and ethical interests begin to dominate; political or religious zeal sometimes becomes the mainspring of action; and in the course of the period religious doubts often obtrude themselves. The great increase in physical and mental energy shows itself in the waves of emotional vitality that now appear; indeed, one of the chief aims of those who aspire to guide youths through this stormy period should be to turn these tempestuous emotions into proper channels. It becomes more than ever important that education should not be the mere storing up of knowledge, but that it should provide outlets to action. This is the time for athletic games, gymnastic exercises, manual training, and work in the laboratory. Now or never is the time, too, for opening out any intellectual and æsthetic interests that are

[1] See Dr. C. Roberts, *Report of Commission on Secondary Education*, vol. v., pp. 356-7.

to become permanent incentives to right conduct. "An undue tendency to introspection must be checked by allurements to action," and "exaggerated ambition and unreflecting activity must be checked by allurements to serious studies."[1]

Individual variations.

The rapid sketch which has now been given of the growth and development of an average boy or girl will, it is believed, prove interesting and instructive to any one who has to deal with considerable numbers, and who is therefore compelled to some extent to have regard to average conditions. One must hasten to add, however, that there is undoubtedly a great deal too much of confident talk about *the* child, *the* boy, and *the* youth, as if physical and mental features were fixed and invariable in young people of the same age. The fact is that these general statements of what is to be looked for in average cases are of value chiefly because they provide a sort of standard or norm to which we may refer the innumerable deviations, slight or serious, that are found when we come to examine individuals. Consider, for example, the simple and well-ascertained facts relating to physical growth. It is found that the average height of boys of six is forty-four inches, but that their heights vary from forty-one to forty-seven inches; that at eleven years the figures vary from fifty to fifty-eight, with an average of fifty-four; and that at fifteen they vary from fifty-seven to sixty-eight (a difference of eleven inches), with an average of sixty-three.[2] Now one practical inference is that, though there certainly is such a thing as a school desk of standard dimensions for boys of a given age, yet the most injurious effects are likely to ensure, to eyesight and to bodily carriage, when all pupils of that age are required to sit for several hours a day at desks of precisely the same size and proportions.

What is true of the physical life is equally true of the mental life. Leaving out of consideration mental deficiency on the one hand and genius on the other, and confining ourselves to

[1] W. H. Burnham, "The Study of Adolescence," in *The Pedagogical Seminary*, vol. i., pp. 174-211.

[2] The figures are those of Dr. Bowditch, fractional refinements being omitted.

moderate deviations from the normal course of development, we find that individuals differ to a most important degree. The differences are illustrated, in the case of children too young for school, in the varying periods at which they are able to talk. And when the school age is reached, every observant teacher, who has not been embarrassed by having to deal with excessive numbers, knows how markedly the periods differ at which children are ripe for learning to read, to write, to sing, to play a musical instrument, or for beginning the more abstract studies, such as grammar and theoretical geometry. A well-known university teacher thinks he has " seen college students unfitted for ever for 'philosophy' from having taken up that study a year too soon ".[1] It is to be feared that many a child has been similarly unfitted for some of his studies; and though the exigencies of school organisation compel us to work by the law of averages, we may at least stop short at worrying children who exhibit backwardness in this or that branch of school work, in the hope that time will in many cases cure the deficiency. The change often comes quite unexpectedly. In such an hour as we think not, the boy who has been a dunce at arithmetic or grammar brightens up. Ideas which refused to hang together seem suddenly to acquire an attraction for one another, and a coherent mental system, capable of duly assimilating fresh ideas, is the result. But this, it must be admitted, is not the common case.

Temperament.

It would be a great help to teachers, as to all others who have to work upon human material, if there existed a developed science of individual character. Psychology has made great headway in the analysis and synthesis of the constituent elements of every mind, but little or nothing of scientific value has yet been done towards enabling us to classify and explain the peculiar mental constitution of the individual person. Failing this, we have to rely chiefly upon our general observation, and upon such facility as we possess in shrewdly estimating the characters of children. Every one knows, for example, the common distinction between the " quick " and the

[1] W. James, *Talks to Teachers on Psychology*, p. 149.

"slow" child. The one soon learns his lesson, but is apt to forget it easily; the other learns slowly but more surely. The one is alert and vivacious; the other perhaps comparatively heavy and dull. The one soon runs the whole gamut of moods, from the seventh heaven of bliss to utter despondency; the other maintains a much more even frame of mind. The one judges and decides hastily; the other more guardedly and, on the whole, more soundly. The one is usually lacking in perseverance; the other is more tenacious of purpose. The one is quick-tempered but generous-hearted and forgiving; the other is slow to anger but sometimes not of great mercy. The one is the more attractive and popular character; the other wins his way to favour less easily, but often "wears" better. The one lives largely in the present; the other's thoughts are often directed to the future. If the one fails, it is because he needs more strength; if the other fails, it is because he needs more time.

These are of course very broad contrasts, and they hold only of extreme instances of the two types. Still, every one who has had experience of life, whether amongst children or adults, will readily recall examples that answer fairly well to the above descriptions. We might go on to introduce an additional distinction. Mental processes, besides being quick or slow, may be strong or weak; and on this basis a four-fold classification has been suggested, which answers to the traditional four temperaments. The choleric temperament (quick and strong) is energetic, impetuous, and chiefly concerned with outward events; the melancholic (slow and strong) is sentimental, with a marked tendency to introspection and suspended judgment; the sanguine (quick and weak) is ardent, impressionable, and unsteady; the phlegmatic (slow and weak) combines tardiness with quiet persistence. Galen drew these distinctions seventeen centuries ago, and, though the physiological basis on which he proceeded was sadly unscientific, the practical value of his classification seems attested by the fact that recent writers have adopted it as their starting-point. To a teacher who is endeavouring to understand the individual characters of his pupils, this old doctrine of temperaments certainly offers suggestive points of view. He must, however, avoid the

mistake of trying to fit a pupil too definitely into one or other of the classes we have named, for most children will present characteristics that will bring them under more than one class.

Individuality may be defined, sufficiently though somewhat vaguely, as variation within normal limits. In the foregoing remarks we have taken no account of children whose intelligence falls below those limits. The care of abnormal children, since it forms quite a special subject of inquiry, and gives rise to vocations widely different from that of an ordinary teacher, does not fall within the scope of the present volume. The only point that calls for attention here is that there is no hard and fast line to be drawn between the normal and the abnormal, and so it is worth while taking note of the classes into which the latter are usually divided. At the bottom of the scale we have idiots—those unfortunates who possess no mental assets, who are incapable even of direct self-preservation and require as much supervision as a child of six months. Next to these come imbeciles, who are capable of direct but not of indirect self-preservation. A member of this class would, for example, get out of bodily danger, but could not be brought to earn a living, at least without permanent help and supervision. The third class comprises those who may be expected, as a result of careful training, to earn a livelihood at some mechanical occupation, but who cannot be taught with profit in the ordinary primary school. These are technically known as defective or feeble-minded children. The fourth class includes children who, though extremely dull and backward, can be taught profitably, though perhaps at considerable inconvenience, along with normal children. Both for their own sake and for the well-being of society, the first two classes should be cared for in special institutions. The case of children belonging to the third class has recently received considerable attention, both in this country and in Germany. They are said to form between one and two per cent. of the population. It is held to be a mistake to withdraw them from the influences of home life, and from the companionship of normal children. They are taught in small separate groups, great stress being placed upon manual employments. Many of them, under careful training,

The mentally deficient.

are able eventually to take their place in the ordinary school, though not with scholars of their own age; and many others become able at least to follow successfully some occupation in which considerable intelligence and skill are not called for.

Concluding advice to young teachers: (1) Study a few children carefully.

One general piece of advice that may be safely given to the young teacher, or to the student preparing to enter upon a schoolmaster's career, is that he should seize opportunities of thoroughly knowing a *few* individual children, and if he can include in the number one or two who exhibit marked physical or mental peculiarities, so much the better for his purpose. He should note their physical proportions and the departure of these from the average or normal figures for children of the same age; he should test by simple appliances their sight, hearing, breathing-capacity, and touch-sensibility; he should get information concerning appetite and sleep; he should record what can be said with certainty about their power of attention, their retentiveness of memory, their tastes, dispositions, and temperaments; he should consult the school report upon their attainments and progress, and, finally, he should compare all these data, with a view to the fuller understanding of each case. A few investigations of this kind, conducted thoroughly and with a definite aim, will go far to make a teacher a good observer of children, to show him that each pupil must be regarded as a distinct personality, and to convince him that his methods of instruction and discipline must be correspondingly varied. Child study is essentially a laboratory subject, and can no more be pursued by means of books alone than can chemistry or geology.

(2) Recall your own childhood.

Thus far we have regarded the study of a child just as one would regard the study of a plant or of an animal—as a case of external observation. And this is necessarily so, since we cannot transplant ourselves within the child's own consciousness and examine the workings of his mind directly. The "giftie" to see others as we "see oursels" is a still more impossible one than that for which the poet sighed. There is only one child who can in any sense be observed directly, namely, one's own past self; and he can be observed only so far

and so accurately as memory happens to serve one. But our recollections of our own childhood are fragmentary, uncertain, and inevitably coloured by subsequent experience. Still, various ways suggest themselves by which our efforts at recall may be helped out; and the value of such efforts, to one who aspires to a completer understanding of the children committed to his care, can hardly be questioned, since one of the chief secrets of good teaching is the power to place oneself at the pupil's point of view. So the young teacher is counselled to form as faithful a picture as he can of his own childhood—of its events, and of his ways of thinking and feeling about them. He will perhaps get assistance from parents and other relatives, from nurses and teachers, from old letters, and from other sources that will suggest themselves. He may be fortunate enough still to possess old exercise books and other similar records of his past; and he will do well to read over again some of the books that most impressed him in his juvenile years. The attempt so to reconstruct one's own childhood will be found no less interesting than profitable.

REFERENCES

On the earlier periods consult the works of Susan Isaacs, Pisget and Gesell. Sully's *Studies of Childhood* is still to be recommended. On adolescence, the books of L. Hollingworth, L. Cole and F. D. Brooks.

The literature of the whole subject is now very extensive.

PART IV

THE MEANS OF EDUCATION: (*a*) TEACHING

CHAPTER VI

THE CHOICE OF STUDIES

"The prime and direct aim of instruction is to enable a man to know himself and the world. Such knowledge is the only sure basis for action, and this basis it is the true aim and office of instruction to supply. . . . As our public instruction gets a clearer view of its own functions, of the relations of the human spirit to knowledge, and of the entire circle of knowledge, it will certainly more learn to awaken in its pupils an interest in that entire circle, and less allow them to remain total strangers to any part of it. Still the circle is so vast, and human faculties are so limited, that it is for the most part through a single aptitude or group of aptitudes that each individual will really get his access to intellectual life and vital knowledge . . . The grand thing in teaching is to have faith that some aptitudes of this kind every one has."—MATTHEW ARNOLD.

Significance of the problem.

IN this chapter and in several succeeding ones we are to undertake a study of the leading topics of the theory and practice of teaching, and first among these stands the problem of the choice of studies. Profoundly significant as it appears to the student of education, and irresistibly as it has forced itself upon public attention through the social and economic changes of recent times, this problem is not even yet universally recognised in this country as one of great importance. In illustration of this statement we may contrast the conditions that prevail in the greater schools of England with those that prevail in the higher schools of the Continent. The curricula of the secondary schools of Germany, whatever else we may say of them, are in that country regarded as questions of sufficiently grave national concern to deserve careful thought, and to excite exhaustive discussion, among the ablest men of the time. The curricula of the English public schools, on the other hand, have never attracted general attention, and are still modelled largely on

the lines of uncriticised tradition. Signs are not wanting, however, that even these schools will not always continue to rely upon their splendid achievements in the more direct formation of character. The continental tendency is perhaps to rely too exclusively upon well-devised curricula and improved methods of teaching, as if these in themselves constituted a satisfactory system of education. The characteristic shortcoming of English education has been its tendency to ignore the value of sound instruction and of varied intellectual interests. It is true that instruction, however unexceptionable its basis, is not the whole of school education, and in a boarding school perhaps not even the greater part of it. But it is also true that nowhere do the general aims of a school receive such marked concrete expression as in its curriculum, and that by nothing is a nation's accessibility to ideas more fairly measured than by the intellectual food it is content to supply to its future citizens.

The teacher's province.

The choice of studies is not a question to be decided by teachers only. When the curriculum has been decided upon, and it remains to arrange and to present the material selected, the teacher is on his own ground, and here his professional prerogative, if he be fit for his duties, should be unassailable. But of the matter as distinguished from the method of his instruction he is not the sole judge. A curriculum is the outward expression of the ideas and aspirations of a community, not of an individual; and the community has a right to lay down the broad lines which instruction shall follow in its schools, with due deference to the opinion of the professional element as to what constitutes suitable mental food for children. A wise educational authority would, however, whilst requiring conformity to a general plan of study, refrain from detailed prescription, and would leave its teachers all possible freedom for experiment and for the play of individuality. A primary teacher, for example, should not be bound down to one particular course in history or geography; though he should not be allowed to omit these entirely and to teach Greek instead.

The need of an understanding as to the main principles that ought to govern the construction of curricula is well illustrated

by the schemes that were from time to time issued by the central authority for English primary schools during the three decades following the Act of 1870. The genesis of these schemes may be described briefly but not unfairly as a process of somewhat aimless tinkering. In the Code of 1870 the only obligatory subjects were the traditional three "R's," together with needlework for girls; a long list of optional subjects was added, but these were confined to the elder scholars, and were not extensively taught. In 1875 it seems to have occurred to the responsible authorities that the possession of tools, without any training in their use, left something to be desired, and so what appeared the most important of the optional subjects (English, geography, history, and needlework for girls) were grouped apart, and the teaching of not more than two of these was encouraged, and became general. By the Code of 1882, elementary science was added to the list, English being at the same time made compulsory if any of these subjects were taught at all, and history being confined to the elder scholars. In 1890, drawing, which had hitherto received scant encouragement, was made obligatory in boys' schools, in view of the opinion of the Technical Education Commission, that the instruction given in the primary schools was too exclusively literary, tending to produce quill-drivers rather than artisans. Five years later, object lessons were made compulsory for the younger scholars, again on the ground that the instruction was too bookish, and ill-adapted to the future needs of the children. During the period from 1870 to 1895 there was nothing to prevent a child, even in a rural school, from being superficially skilled in the mysteries of parsing, whilst he remained profoundly ignorant of the simplest natural phenomena, not to speak of the geography of his own country; and not until recent years has a reorganisation of the grant-earning machinery cleared the way for rationally devised curricula.

The need of criteria of choice: an historical illustration.

Of secondary schools there is, perhaps not altogether unfortunately, no such definite story to be told. As primary instruction took its point of departure in the requirement that every child should be able to read, write, and cipher; so secondary instruction was traditionally confined almost entirely to the classical

languages; and one task of the educational reformer has always been the amendment of this programme, with the object of bringing it into closer conformity with his conception of modern needs. The reformer, however, is of all people the most prone to overstate what may turn out to be a good case; and so we find that the discussions about curricula that accompanied the scientific awakening of the nineteenth century are of a highly controversial character. The attempt to assess "education values" amounted to little more than the marshalling of arguments, of varying degrees of soundness, by the champions of science and by the defenders of the classical curriculum.

The problem not an easy one.

Thus we have had a stage of confusion in the primary, and of acrimonious discussion in the secondary, sphere. Time has softened the asperities of debate with regard to secondary school studies, and it is now generally recognised that we need dispassionate surveys of the whole situation, rather than one-sided advocacy of particular groups of studies. We must not flatter ourselves, indeed, that the general adoption of the calm and judicial mood would be sure to produce unanimity, because a man's ideas about education, like his political and religious opinions, depend in a great measure on his total outlook upon life. By no feat of logical proof could a bishop and a free-thinking philosopher be brought to agree upon the details of a curriculum for any type of school whatever. Still, a *modus vivendi* must in practice be found, and it is our business to investigate the best means of finding it.

A standard of values needed.

What we need is clearly a standard of values,—a criterion, or a set of criteria, which may enable us to judge as to the admissibility of any given study. It is easy enough to make out a case for the inclusion in a curriculum of almost anything that is not immoral, from the study of Shakespeare's plays to the manipulation of petroleum lamps; and well-meaning persons will always be found to push the claims of their crotchets. Sloyd, book-keeping, shorthand, physiology, "heuristic" science, gardening, and cookery—these and many more are in turn held aloft as the one thing needful. Amid the welter of confused proposals, we must try to keep steadily in view

the real and fundamental issue—how to fill the short and precious years of school life so that they may *on the whole* form the most effective preparation for the varied activities of adult life. In other words, we must try to gauge the relative values of different sorts of knowledge and skill, and we must not allow our judgment to be warped by having our attention fixed exclusively upon the absolute value of this or that item. Clearly then, we need a standard of values.

"Mental discipline" as a standard of value.

The defenders of the old classical curriculum for secondary schools have relied a good deal upon the argument that, though the knowledge imparted is of small use in the affairs of life, yet the mental discipline afforded by a linguistic training is of inestimable value. It has been held that, even though the pupil may never reach the point of appreciating the masterpieces of Greek and Roman literature, yet a study which requires him to draw fine distinctions, to look at a question from all sides, and to exercise a nice care in the choice of words, so strengthens his mental powers as to fit him in the best of all ways for entering upon any sort of vocation. To this it has been objected that linguistic instruction does not train the pupil to use his eyes and hands, and that it makes excessive demands upon the memory. Similar contentions have not been unknown in the region of primary education. For many years formal grammar was made practically compulsory in English primary schools, for pupils upwards of seven years of age, on the ground that, even if its practical use was indirect and problematic, it was at any rate a good mental training—a training comparable in its degree to that which a boy in a public school got out of Latin grammar. Later, object lessons were made universal in these schools, chiefly on the ground that the "observing powers" of the children were being sadly neglected.

Example of the application of this principle to the choice of studies.

In all arguments of this kind there lies the tacit assumption that ideal curricula may be evolved out of subjective considerations alone; and that all we need to do is to make a list of the mental powers to be cultivated, and set against each of them the studies which are supposed to conduce most to their cultivation. This way of conceiving the problem arose out of, and was reinforced by, the

defunct psychology of faculties to which reference has already been made. "Memory," says a recent writer, "is trained by most studies, but best by languages and history; taste is trained by the more advanced study of languages, and still better by English literature; imagination by all higher language teaching, but chiefly by Greek and Latin poetry; observation by science work in the laboratory, though some training is to be got from the earlier stages of Latin and Greek; for expression, Greek and Latin composition come first, and English composition next, for abstract reasoning, mathematics stand almost alone; for concrete reasoning, science comes first, then geometry; whilst for social reasoning, the Greek and Roman historians and orators come first, and general history next." From all of which he concludes that "the narrowest education which can claim to be at all complete includes Latin, one modern language, some history, some English literature, and one science".[1]

Is mental discipline the real criterion?

But even if the studies here enumerated could be proved beyond dispute to furnish the best possible mental gymnastic of the kinds respectively claimed for them, we deny that this is the real reason why they are selected. In order to sustain this position, it will be well to examine some of the current phrases in which the doctrine of faculty-training is embodied.

(1) Science and the training of the "observing powers".

We are told that elementary science, including nature study, is to be taught in order that the faculty of observation may be trained, the implication being that the employment of eyes and hands in discovering the properties of certain objects (no matter what) will make one a good observer of anything that comes in one's way. Now there is no sane person with normal sense-organs who is not a good observer of certain sorts of objects and events: the thief who has rarely seen the inside of a school, much less of a laboratory, may have a sure eye for watches and purses. The question is, then, not one of training people to observe, but of training them to observe some things rather than others. In other words, the question is one

[1] M. G. Glazebrook in Barnett's *Teaching and Organisation*, p. 334.

of creating interests. We have no faculty of observing things at large, and no such faculty could be evoked, except by cultivating interests of appalling width. The geologist in the field, the physicist in the laboratory, the scholar amid his manuscripts, the detective on the track, and the physician in his consulting room, are all keen observers in their respective spheres. Taken out of these spheres, they may be at least as unobservant as other people; the utmost that can be said is that a good observer in one department will probably not be a bad one in kindred departments. The function of elementary science in a liberal scheme of instruction is not to cultivate a supposed knack of observing things in general—a doubtful boon, even if it were attainable—but to enlarge the area of the pupil's interests, and to teach him that there are other means of ascertaining truth, at least as important as the medium of the printed page. If we are to use the slang of psychology at all, we must talk, not of training our "observing powers," but of cultivating suitable "apperception masses".[1]

(2) The culture of memory by various studies.

The choice of studies has been influenced, too, by the plea that, whatever other value a study may or may not possess, at any rate it improves the learner's memory. The writer quoted above thinks that "memory is trained by most studies, but best by languages and history," and a writer usually so safe as Sir J. G. Fitch makes the admission: "So it would train my memory if I learnt the leading article of this morning's *Times* by heart, or the names of all the senior wranglers from the beginning of the century".[2] Who shall say how many lines of doggerel, how many spelling lists, how many superfluous arithmetical tables, how many strings of dates and catalogues of names have been "got by heart" on the ground that, if they are good for nothing else, they are good for the memory? Now some of this labour might be justifiable if the exercise of one's brute retentive power were the same thing as the improvement of one's memory. But this is more than doubtful. Recent psychologists have shown pretty clearly that retentiveness

[1] See the excellent chapter on "The Meaning of Observation" in Prof. Adams' *Herbartian Psychology*.

[2] *Lectures on Teaching*, p. 138.

is a native quality of the brain, given once for all and, probably unchangeable, except so far as bodily health affects it.[1] If this be true, the sense in which memory can be cultivated is at once limited. Improvement of memory is to be sought, not in rote-learning, but in clear thinking, orderly arrangement, lively interest, and close attention. So long as these are present, the records of football and cricket are as good for the memory as the records of history. Again we have a question, not of training a faculty, but of evoking interests. It is therefore an inversion of the facts to say that we choose any study or exercise because it trains the memory. We make our pupils learn arithmetical tables and poetry, because in these cases the *ipsissima verba* are worth knowing and remembering; if this were not so, no specious clap-trap about cultivating the faculty of memory could justify the infliction.

(3) Literature and imagination.

Let us next examine the proposition that literature is taught in order to cultivate the imagination; by which is usually meant in this connection the power of visualising, of mentally picturing, objects and scenes. The researches of Galton[2] and others show clearly that this power varies astonishingly in different people; in some it is almost totally absent, whilst the mental imagery of others is brilliant and distinct. It is more than probable, too, that children, as well as adults, differ enormously in this respect,[3] and that some have to atone in other ways for their deficiency. Still, we may assume that any child can visualise more or less distinctly, and that he must exercise this power in reading a scene from Shakespeare or a descriptive passage from Scott; for the aim of the writer has been to give a verbal rendering of what he has mentally pictured, and the reader's aim is to re-construct the pictures thus translated into words. It would be ridiculous, of course, to say that this is

[1] See the chapter on "Memory" in James' *Text-book*, or his *Principles*, or his *Talks to Teachers;* and compare Stout, *Manual of Psychology*, bk. iv., chap. iii., § 5.

[2] See *Inquiries into Human Faculty*, pp. 83-114.

[3] It would be difficult, *e.g.*, to account otherwise for the very different rates at which children learn to spell.

the whole of what is meant by appreciating literature; but it is a not unimportant part. To affirm, however, that a boy is taught literature because it thus exercises his imagination is like saying that one goes to church in order to exercise his limbs. One may, of course, gain physical benefit from the walk; but it may well happen that a stroll to a neighbouring tavern is hygienically preferable. The faculty of imagination is there, and will be exercised, if not upon healthy literature, then upon something else. And so we are brought round again to the position that one study is preferred to another, not because of the faculties it trains, but because of the interests it evokes. The imagination of some people is exercised, only too effectively, by the literature of criminality and nastiness; our pedagogic aim in teaching literature is not directly to cultivate, and still less to create, a faculty which the pupil already possesses, but to bring him to exercise his gift of imagination in healthful ways. We teach literature and history simply because they are worth knowing; and it is a mischievous perversion of the facts to say that we teach them in order to train the imagination.

It would hardly be necessary to insist further upon what seems so obvious, were it not that he who thinks about training the imagination of his pupils, when he ought to be thinking of the subject in hand, is likely to do positive harm. Young teachers are sometimes counselled to make perfectly clear to themselves the picture suggested by a poem, and then to adopt all available means of making the same picture clear to their pupils. But a suitable poem will convey its own meaning without elaborate preliminaries, and the help given by the teacher should be by way of hint and suggestion rather than of dissection. The child should be allowed to construct his own mental pictures, with as little help as possible,—not required merely to imitate another's interpretation. This would be true, even if the teacher's interpretation were a masterly one; but first-rate literary exegesis, like the effective illustration of books, is an uncommon thing. The illustrations of a Cruikshank are a real help to the reader; whereas your dull unimaginative pictures are a hindrance, because they merely clip the wings of the reader's fancy. It is pretty

certain that *Robinson Crusoe* and the *Arabian Nights* have in this way been partly spoiled for many a child.[1]

Nowhere has the idea of a formal training of the faculties worked more mischief than in the instruction of small children. Under the influence of that idea teachers have dosed the children with commonplaces about natural objects, in order to train the faculty of observation; and they have dosed them with an excess of myths, fairy tales, and startling fabrications about the sayings and doings of inanimate objects, in order to train the imagination. Now myths and fairy tales should be to the child what novels and plays are to the adult—his relaxations, not his pursuits. "The John and Jane that most of us know let their imaginations play about the current and familiar contacts and events of life—about father and mother and friend, about steamboats and locomotives, and sheep and cows, about the romance of farm and forest, of seashore and mountain."[2] We do not need to go out of our way, and to make frequent excursions into the region of unrealities and impossibilities, in order to find material for exercising the child's imagination. The same material, the homely facts of life that lie to hand, will serve to exercise the imagination as well as the senses, provided we use it in the right way.

(4) Mathematics and the reasoning faculty.

We pass now to the thesis that the purpose of mathematical teaching is the cultivation of the reasoning powers—an old thesis, as the literature of pedagogy, unofficial as well as official, abundantly attests. This opinion is connected with a common idea that there is an essential difference between mathematical and other reasoning, and that the former depends upon a peculiar gift of inference which has been vouchsafed to some in a high degree, and almost denied to others. It is not uncommon to hear persons of good education confess, and even pride themselves upon the confession, that they could never "do" mathematics, the implication being that this is a study requiring some special qualities of mind, the absence of which one can afford to admit. They forget

[1] On this point see an article by "A. S." in the *Journal of Education*, September, 1885.

[2] J. Dewey, in *Elementary School Record*, No. 1.

that the essential step in all reasoning, that of comparing two ideas with each other by an intermediate third idea, is always the same, whether reasonings are about magnitudes, or about the facts of history, or the pronouncements of literary criticism; and though it is quite true that through various causes some people never acquire a *taste* for mathematics, yet sheer inability to grasp mathematical reasoning is not possible to any normally constituted mind. The mathematician is not a wizard. The virtues of his reasonings reside, not in any peculiarity in his method of inference, but in the fact that he always knows precisely what his terms signify, and that his premises are always necessarily true, his proofs rigidly accurate, and his conclusions readily verifiable. But even these latter virtues are often attainable in any branch of knowledge; it is not necessary to study mathematics in order to know what accurate knowledge and rigid demonstration mean. When we have decided to teach mathematics, by all means let us teach them so that they will furnish exercise in cogent reasoning; but let us recognise that mathematics are taught, not because of the reasoning involved, which is not essentially different from other reasoning, but because some knowledge of mathematics is indispensable. If we want to train the pupil specially in the principles of correct reasoning, we must teach him logic, for which mathematical studies are not an adequate substitute.

Confusions that arise when "formal discipline" is made the criterion.

It is somewhat odd, but extremely instructive, to find the advocates of a certain study stoutly claiming for it the disciplinary value which is generally supposed to reside in a special degree in other studies. Thus one writer avers that "the teacher who makes clear the distinction between the subject and the predicate, or between the essential and the non-essential parts of a sentence, is as truly a teacher of science [*i.e.*, as truly gives the discipline supposed to be peculiar to science] as he who explains why water boils, or what are the respective functions of the heart and lungs".[1] The present writer has, too, heard an able literary professor indignantly repel the suggestion that literature is

[1] Sir J. G. Fitch, *The Arnolds*, pp. 53, 54.

concerned chiefly with the imagination, and warmly maintain that it furnishes also an adequate training of the reasoning powers. On the other hand, Spencer is at pains to prove that science is at least equal to language as an all-round intellectual discipline—even of memory.[1] Similarly, Huxley declares that there is no side of the intellect which is not brought into play by a thorough study of human physiology.[2] Now all these diversities of opinion are reconciled the moment we recognise that in the act of genuine learning, whatever the subject may be, it is the whole mind that works, and not this or that supposed special organ of mind; so that mental discipline depends, not so much upon the subjects taught, as upon the method of teaching. Bad science-teaching will not improve the reasoning powers, but will leave the learner still under the thumb of authority and prescription; whilst good science-teaching will avoid this evil, and will also exercise the imagination, by opening out wonderlands as glorious as those of literature. On the other hand, bad literary and historical instruction will leave the imagination barren, whilst sound instruction in these branches will not only avoid this mistake, but will also furnish the means of abundant exercise in cautious judgment and valid inference.

Some possible misapprehensions considered.

Before leaving this part of the subject it will be well to guard ourselves against certain misapprehensions. In the first place, the reader will perceive that nothing has here been said to underrate the importance of intellectual discipline; on the contrary we should hold that such discipline is one of the supreme objects of education, and that the ultimate ends contended for in the first chapter cannot be achieved without it. What we mean is, that though the *method* of instruction should be carefully devised with a view to mental discipline it is misleading to say that the choice of the *matter* of instruction depends upon considerations of discipline. Many of the older writers on education, and some of the later ones, have talked as if it signified little what subjects of study are selected, so long as good mental gymnastic is provided. They have failed to note

[1] *Education*, ch. ii. [2] *Science and Education*, p. 220.

that, even if it could be shown that Sanscrit would provide a better gymnastic than Latin, or Chinese than French, or chess than mathematics, the respective substitutions could not on that account be made. To say that one subject is as good as another, provided it afford equally good mental discipline, reminds one of the celebrated saying that, provided it afford the same amount of pleasure, pushpin is as good as poetry. The "cultivationist" pedagogy is as bad as Bentham's ethics.

In the second place, when we emphasise the fact that in the pursuit of any branch of study the whole mind works, and not this or that supposed special organ of mind, we must not be supposed to deny that every subject has its own peculiar psychological place and value. It is obviously true, for example, that descriptive geography and history exercise one's visual imagination in a special degree, whilst constitutional history and abstract science do not. "Abeunt studia in mores," quotes Bacon, and we do not contest his statement that "histories make men wise; poets, witty; the mathematics, subtle; natural philosophy, deep; moral, grave; logic and rhetoric, able to contend".[1] But this is no argument for constructing curricula on a psychological basis. For when all the greater interests of mankind are represented in a course of instruction—and we shall presently see that they ought to be—it is inconceivable that the pupil will not be duly exercised in every sort of useful mental process. Upon this point we may well accept Spencer's dictum that "it would be utterly contrary to the beautiful economy of nature, if one kind of culture were needed for the gaining of information, and another kind were needed as a mental gymnastic."[2] Our only difference from Spencer will be as to the kind of culture needed for the gaining of information.

There is a third possible misapprehension from which we must guard ourselves. When we assert that any one subject of study involves the whole activity of mind, and that no normally constituted mind is incapable of mathematical or scientific or historical or literary culture, we do not commit ourselves to the extravagant proposition that such ability as any individual may possess may be equally well employed in any direction. A man's special bent

[1] Essay 50, *Of Studies*. [2] *Education*, chap. i.

doubtless depends to some extent upon the accidents of early environment; but this is not all. It is, of course, safe to say that under different circumstances of early training Wellington *might* have been a great mathematician, Newton a great warrior, and Tennyson a great engineer; but few would care to assert that they would in all likelihood have become equally great men, and fewer still that the convertibility of talent is a principle of wide application. Though brain physiology speaks at present with an uncertain voice, yet the facts of common observation seem to forbid such a supposition. Similarly, among the boys that occupy the benches of a classroom, there will be those who show a special talent for literature but no gift for mathematics, those who are good at headwork but clumsy at handwork, and so forth. This fact, however, though it will largely influence the details of the teacher's work, will not affect the structure of the curriculum until the stage of specialisation is reached. Though there are undoubtedly marked quantitative differences between the mental powers of individuals, yet we assume with good reason that all minds are qualitatively similar. Until the time comes when the scope of instruction must inevitably be narrowed, we are right, so far as the choice of studies is concerned, in ignoring individual peculiarities.

So much, then, for the "cultivationist" view of the curriculum. Let us agree to abandon the notion that a formal training of the mind is the right guide to the choice of studies. At this juncture the Philistine, who would simply have scoffed at the doctrine we have thought it worth while to weigh seriously, is ready with his prescription. Of the children in the primary schools he would say—Teach them to read, write, and cast up an account; and for the rest teach the girls to sew and to cook, to clean and dust, wash and iron; and let the boys learn gardening and carpentry, drill and account-keeping, or whatever else is likely to be "useful" in later life. He would make short work of history and literature, geography and science. And as regards the pupils in the secondary schools, he would equally emphasise the surpassing importance of all that pertains to the future business or profession. This of course is the bardest

The plea for bread-and-butter studies.

form of the utilitarian plea, and needs little further comment after what was said in the first chapter, when we discussed broadly the aims of education. We saw there that the narrowly utilitarian ideal contains an important element of truth; indeed, it raises at once the more practical question—To what extent should the instruction given in a school for general education bear upon the requirements of the pupil's future occupation? To this question various answers are given. Some take the high ground that neither the primary nor the secondary school should take direct cognisance of such matters, that the instruction should be perfectly general in its character, suited to all alike, and chosen without reference to any one's special requirements. Others hold that whilst primary education should furnish a common basis, secondary education should definitely look forward to the special life that the pupil is destined to live.[1] A third view is that in both primary and secondary schools the studies of the last year or two of school life should be arranged so as to allow of some preparation, in a general way, for the pupil's future occupation; but not so as to invade the province of those institutions which prepare directly for special trades and professions. This last view, which is in the nature of a compromise, seems likely to prevail.

The true standard of value.

The fact then that the pupil is eventually to follow some occupation—in the vast majority of cases a bread-winning occupation—though it is by no means to be lost sight of, carries us but a little way in solving the problem of the choice of studies. Whether the years spent at school be few or many, instruction must include in its purview the wide range of life's activities, and must not be conducted as if man lived by bread alone. The education of which instruction is a part must prepare the child, not for mere livelihood, but for life. The helpless little stranger that appeared on the scene six or seven years ago (let us say) has managed, by hook or by crook, to adapt himself in some measure to his surroundings; and the business of the teacher is now to help to complete, as far as may be, the process of adaptation thus begun. The child and the world, physical and social, stand confronted, and the question

[1] See *ante*, p. 38.

before us is that of correlating the two. No problem of education, least of all that of the choice of studies, can be satisfactorily attempted, much less solved, without constant reference to *both* of those two great outstanding data: first, the child, whom we must take as he is given us, with certain capacities and interests that we must take the trouble to comprehend; and secondly, the community of which at birth he became a potential member. *A rationally conceived curriculum must be the resultant of these two forces: the nature of the child, and the requirements of the community.* How grossly the first has been overlooked is a thrice-told tale: the community, acting through its state officials, has issued its *fiat*, and the poor child has been left to battle it out with his teacher as best he could. In certain quarters, the pendulum has perhaps swung too violently in the other direction. Enthusiastic devotees of child study, especially some of those who label themselves Froebelians, are apt to forget that the child is there to be correlated with his surroundings. A failing that leans to virtue's side is nevertheless a failing.

Whence, then, is the material of instruction to be drawn?

Upon the general question of the nature of the child, what was said in the fifth chapter must suffice, and we will now pass on to notice the main features of that environment with which the child has to be brought into as vital relations as his own powers, and the length of the period of preparation, will permit. The child's surroundings are infinitely varied, and the reason why we prefer one part or aspect to another is that some are more fundamental, in the sense that they cover a larger area of life and practice. We may not agree about the relative values of science and literature, but we are all agreed that both should come before heraldry and Egyptian hieroglyphics. And what is the first rough programme to which these considerations lead us? Assuming as an axiom that exercises tending to healthy bodily development are essential, we observe that the child is born into a society where certain virtues are prized, where certain notions of right and wrong prevail, and where divine sanctions of conduct are generally recognised: these must, whether by direct instruction or by informal suggestion, be

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instilled. Next, the position and power of the community, for membership of which the child is destined, are the sequel of a long and deeply interesting past, which is closely connected with that of other countries, and which strikes its roots in civilisations which have now become but a brilliant memory; hence the claims of history, first of fatherland, and then of other countries, to a place in any liberal scheme of studies. Again, the giants of his race have left behind them, in forms that time cannot wither or outwear, the best that they have thought and felt; and from these imperishable sources the child must be helped, according to the measure of his capacity and opportunities, to draw inspiration; he must be initiated, however humbly, into the delights of literature. But for this, as well as for the more prosaic purposes of daily life, he must extend his acquaintance with the language he has learned to speak; he must master its symbols and its usages; he must learn to read, to write, and to express himself with clearness and precision. If his school days be sufficiently prolonged, he will acquire for practical purposes the use of one or more languages besides that of his own nation; and (though this case must always be comparatively rare) he may learn to appreciate a few of the masterpieces of the corresponding literatures. Musical notation, drawing, and modelling—the elements of those arts which know no distinction of nationality—will also claim attention. Furthermore, he must gain an insight into the physical world which encompasses him, and inevitably inspires in him a budding interest; he must learn the elements of geography; means must be at hand whereby an intelligent love of nature may be fostered; and if he remain at school long enough, the study of one or more of the special branches of science may be begun. Lastly, the study of nature implies the study of elementary mathematics, because the very moulds in which our notions of objects are cast are those of space and number.

Morals and religion, history, literature and language, music and drawing, geography, natural science and mathematics; these, then, and chiefly with reference to the national culture, are the materials from which the child's studies and exercises are to be drawn. The list seems alarmingly imposing and ambitious, and

would make any sensible man sigh for the good old days, unless it were taken with the all-important qualification that the child's own capacities and interests are ever to be respected. The fear that we shall make him a Jack of all trades and a master of none vanishes as soon as we realise that the object of early instruction is not to make him a master in any department, but to ensure that none of his native and spontaneous interests shall be neglected, and that the plastic period of youth, the period during which the more artificial interests *can* be developed, shall be turned to fullest account.[1] There is a profound lesson for educators in what has been called the "law of transitoriness of instincts". Like the sucking instinct in mammals, and the following instinct in certain birds and quadrupeds, the child's first promptings to any one of the intellectual interests we have named may fade away, and become practically irrecoverable, unless opportunities be then and there forthcoming.[2] Every one knows how sorely against the grain are a grown man's efforts to become a decent musician, or naturalist, or linguist, and how well-nigh impossible it is that he should ever feel really at home in any field of knowledge or skill, unless the days of his youth have been blessed with the stimulus of timely opportunities. This is no plea for the dabbler in many things, or for the pretentious amateur; it is a plea rather for the cultivation of broad interests in these days of narrow specialism, and for ensuring that none of the child's native gifts shall escape our notice, and so perish of inanition.

Many-sided interest to be distinguished from dabbling in many things.

The reader will see that, to atone for all the destructive criticism that occupied us in the earlier part of this chapter, we have now taken an important constructive step. Instead of talking of choosing studies so as to train all the faculties, we talk of choosing them so as to evoke a many-sided interest in the greater concerns of existence. We plead for all-round culture, but we base our plea upon social rather than upon psychological grounds.

[1] *Cf.* Locke's saying: "The business of education is not, as I think, to make the young perfect in any one of the sciences, but so to open and dispose their minds as may best make them capable of any when they shall apply themselves to it". [2] See James' *Principles of Psychology*, ch. xxiv.

It will be useful at this point to note the various attempts that have been made to classify, from the pedagogic point of view, and more or less exhaustively, the wealth of material from which, as we have seen, the school curriculum has to be drawn.

Classification of material of instruction.

A distinction has already obtruded itself between those studies which are more strictly connected with the child's human or spiritual, and those which are more strictly connected with his natural or physical, surroundings. To the first belong language, literature, history, religion, morals, and the fine arts. The second group includes the mathematical and physical sciences. Geography, concerned as it is with the ways in which the physical environment affects and is affected by the presence of mankind, seems to stand midway between the two principal groups, having close affinities with history on the one side and with natural science on the other. The distinction between these two great groups corresponds in a measure with the historic conflict between the two ideals known as humanism and realism respectively. It should be observed, however, that humanism has been too narrowly identified with Greek and Latin literature; and that realism is in a sense falsely so called, since both groups are equally concerned with things or realities.

The human and the scientific groups.

Some writers lay stress on the distinction between "formal" and "real" studies. Formal studies are defined as those which are selected primarily for the sake of the mental discipline which they yield rather than for the sake of the ideas they contain; whereas real studies are said to be chosen rather because they feed the mind with great ideas than because of the discipline they afford. Among the formal studies are enumerated abstract science (including arithmetic and mathematics), drawing, grammar, rhetoric, and logic, of which the two last are usually reserved for the university stage. The real studies include knowledge of common things, geography, literature, history, moral and religious instruction. The reader will perceive, however, that from the point of view defended in this chapter, such a grouping of the material of instruction is not only useless, but

"Formal" and "real" studies.

positively misleading. The so-called formal studies must, like the others, stand or fall on the merits of the ideas they contain. When mathematics are divorced from their practical applications and regarded only as a logical drill, and when the grammar and dictionary are plied for their own ignoble sake, the dry rot of pedantry sets in, and school is no longer a preparation for life. It should be added, however, that the distinction between abstract and concrete studies, between those which do and those which do not formulate truths of an abstract character, though it is irrelevant to the problem of choosing the material of instruction, acquires a true pedagogic significance when we come to the study of method in teaching. This point will come up for consideration in Chapter XI.

Knowledge and skill.

A third distinction, the significance of which will also be further seen when we come to the study of method, may here be pointed out. In some of the studies and exercises we have enumerated, the immediate aim is the acquisition of knowledge, whereas in others the immediate aim is the attainment of skill or dexterity. To the first group belong literature, grammar, history, geography, mathematics, and natural science. To the second group belong reading, writing, oral and written composition, singing, drawing, and the various manual employments. For want of a better pair of terms, we might call these groups theoretical and practical respectively. But we must not lose sight of our cardinal principle that every study should in a sense be practical, *i.e.*, that every bit of knowledge gained should be turned to use. Moreover, the various members of the second group all obviously involve the acquirement of a certain amount of knowledge. Still, the distinction is a clear one, and it brings into relief an important difference of aim in teaching.

In our enumeration of the great representative studies, those which by almost universal consent are believed to touch life at most points, we have made no reference to the vexed question of their relative educational values. We have narrowed down the issue so far as to place certain groups of studies, for the purposes of school instruction, above all the others that engage the attention

of adults, on the ground that they cover the largest area of life and conduct. If it were possible to apply this criterion with ease in assessing the relative values of these fundamental studies, our difficulties would be at an end. But here a formidable obstacle presents itself; for the great variety of standpoints from which life as a whole is viewed by different minds gives rise to bewildering diversities of opinion. Consider a few examples. Those writers and teachers who follow the "Herbartian" lead regard the human studies, because of their incomparable moral content, as "the Joseph to which all the brethren have to bow". One gladly approves of the basis of this choice, but one's faith in the choice itself is shaken when one finds another writer, on precisely similar grounds, coming to a precisely opposite conclusion; alleging that the chemical balance "is to be regarded as an instrument of moral culture, to be treated with the utmost care and reverence," and proposing with unblushing confidence that every afternoon and "several mornings in the week" should be spent in workshop or laboratory.[1] Spencer again speaks pathetically of science as the Cinderella of the curriculum, "kept in the background, that her haughty sisters might flaunt their fripperies," but destined "to reign supreme, proclaimed as highest alike in worth and beauty".[2] An American educational philosopher, in a masterly survey of the field of primary instruction, ventures upon an order of priority in which language studies stand first, arithmetic second, geography third, and history fourth, the other branches (drawing, natural science, manual training, sewing and cookery, music and physical culture) being regarded as of second-rate importance.[3]

Relative values of the great representative studies a thorny question,

These are but a few specimens of the hopeless disagreement that prevails in highly respectable quarters as to the relative values of the different studies. Amid this confused jangle of opinion, how is the poor teacher to act? For, unlike his German cousin, the English

and one that we can afford to pass by.

[1] H. E. Armstrong in *Special Reports on Educational Subjects*, vol. ii.

[2] *Education*, chap. i. It is true that this book was published as far back as 1861, but the recent success of a sixpenny edition affords sufficient evidence (if evidence were needed) of the vitality of its creed.

[3] Dr. W. T. Harris in *Report of Committee of Fifteen* (Boston. 1895).

teacher is usually responsible, at least for the apportionment of time between the various pursuits, and often also for the inclusion or exclusion of studies that are not regarded as essential by the school authorities. He may take comfort in the thought that all discussions of curricula in general, like those above referred to, are foredoomed to partial failure, because they pre-suppose that a scale of educational values can be fixed, applying to all schools, or at least to all schools of the same grade, and to all periods of school life. Instead, therefore, of adding another to the long list of such attempts, it will be more to the point if we summarise the general principles of choice which have already been stated or implied.

Principles on which curricula should be framed.

First, we conceive certain studies to be so universal in their reference, and so wide in their bearing upon conduct and character, that no child should be denied the opportunity of forming the interests to which they lead. Physical culture and instruction in the laws of health being pre-supposed as a necessary foundation of all else, no scheme of school instruction can be regarded as sufficiently liberal in which the human studies (language, literature, and history) and mathematical and natural science, including geography, are not fairly represented; and a most regrettable gap would result from the omission of drawing and vocal music. Some of these are necessary in order that the child may be individually equipped for the battle of life; others are necessary if he is ever to become an intelligent member of his community, sharing in its ideals and aspirations, proud of its past, actively interested in its present, and hopeful of its future.

(1) The greater interests of mankind to be represented.

Secondly, the extent to which choice may be made from these various branches will depend upon the length of school life. In the case of a child whose school life terminates at or about the age of fourteen, and who is therefore confined to the primary course, linguistic instruction will generally have reference only to the mother-tongue, and history mainly to that of the native land; mathematical science will be represented by arithmetic,

(2) The length of school life as determining the extent to which studies can be carried.

culminating perhaps in arithmetical algebra, and by practical geometry; and natural science by a broad and popular treatment of what has come to be known as nature-study. The higher primary school will extend and deepen the same programme of general studies; giving instruction in one or two definite branches of elementary science, which will usually be chemistry and physics, but making only one substantial addition, that of a foreign language, which in this country will generally be French. The pupil of the secondary school will follow a broader programme of liberal studies, and will usually have been educated from the age of ten or eleven years in view of this prospect. His general programme will include the broad outlines of ancient and modern history; a more extended course of English literature; at least two foreign languages; and in addition to the primary course in mathematical and natural science, he will learn the elements of algebra and of theoretical geometry, and of certain selected branches of science —physics and chemistry, or perhaps biology.

(3) Special vocational needs.

Thirdly, we have admitted that the school should take into account the special vocational requirements of groups of pupils, in the sense that the programme of general studies should, during the later years of school life, be so constructed that the stress is applied at some points and taken off at others, but not in the sense that the school should prepare directly for any trade or profession. In the primary school this principle, even when thus qualified, should be very sparingly and jealously admitted, the purpose there being to lay a broad foundation. No attempt, however specious, to prove that shorthand provides a satisfactory "mental discipline" should induce us to suffer the intrusion of so specialised a form of exercise; nor should "a boy of twelve neglect the principles of arithmetic in order to acquire speed in casting columns of figures, or confine his interest in geography to a study of trade statistics".[1] Primary instruction best provides for the claims of vocation, not by taking up with interests of narrow range, but by treating the general studies mentioned above in a thoroughly practical spirit. The higher

[1] London County Council's *Report on Commercial Education*.

primary school should, however, in accordance with its *raison d'être*, prepare boys more especially for commercial life by giving regular instruction in précis-writing, shorthand, and the elements of book-keeping; and for industrial life by special provision for drawing and manual instruction. In the secondary school, the studies of the lower forms will, like those of the primary school, be selected with slight reference to the claims of vocation, but in the higher forms there will be important variations, according as the pupil is destined for commercial life, or for a technical or professional institution, or for a university course in arts or in science. This is the parting of the ways; the stage at which it is necessary to decide whether Latin shall be continued (if it has been begun) and Greek added to the programme; or whether the stress shall be placed upon modern languages or upon mathematics or upon natural science.

(4) The child's interests and capacities to be taken into account.

Fourthly, we have seen good reason to emphasise the necessity of giving heed at every stage, not only to the requirements of the adult life, but also to the interests and capacities of the child. It is probably true that when the first of these principles is wisely interpreted, it can hardly clash with the second; for wise interpretation of the first consists partly in taking the second into account. To a certain extent, and in his own way, the child is keenly interested in adult pursuits. We have seen, for instance, that the claims of special vocation need definite recognition after the age of fourteen, *i.e.*, when childish things are being put away, and the boy or girl begins to be interested in his or her future career. But considerations of the pupil's inner life should compel us also to conduct his earlier and more general instruction in the light of his own practical every-day interests. In the primary sphere, the curriculum of a rural school, for example, will owe much of its tone and colouring to the immediate environment of the pupils; the teacher in such a school will not discourse to little children about whales and crocodiles, when the means are at hand for enlisting their zealous interest and co-operation in lessons on frogs and rabbits; he will regard lessons on tropical trees as a snare and a delusion, when given to pupils who are

unable to distinguish the oak and the elm that grow a stone's throw from the school door; and he will take care that the exercises in composition, the lessons in drawing, and the problems in arithmetic, shall often be suggested by the pursuits of rural life. In an urban centre, on the other hand, the choice of studies may be influenced by the near presence of a zoological garden, of a public park, of docks, of mines, or of manufacturing industries. And in all schools, the geographical and historical instruction will be connected, especially in the early stages, with suitable objects of interest in the neighbourhood.

Spencer's view of the relative value of studies.

It will perhaps help to elucidate and enforce the principles of choice above laid down, if we examine briefly two doctrines of the curriculum which have attracted much attention in recent years, and to which a bare reference was made a few pages back. The late Herbert Spencer, adopting "complete living" as the criterion, classified the various activities of life as those which minister to direct self-preservation, those which minister to indirect self-preservation (*i.e.* to the making of a livelihood), those which have for their end the rearing of offspring, those involved in the maintenance of proper social and political relations, and those miscellaneous activities which fill up the leisure part of life. On the basis of this classification, he places the several branches of instruction in the following order of importance:—First and foremost, because of their bearing upon direct self-preservation, come physiology and hygiene, to which elementary psychology should be added for its bearing upon the right rearing of children. Second in the scale of values come the mathematical and natural sciences, all of which bear upon indirect self-preservation. The third place is assigned to history, which should help to prepare for the functions of citizenship, but which, as commonly taught, is useless for that purpose. The last and least place is given to literature, music, drawing, and the like, of which he says that "as they occupy the leisure part of life, so should they occupy the leisure part of education".[1]

The reader will perceive that Spencer's position coincides in

[1] See *Education*, chap. i., "What Knowledge is of most worth?"

one respect with that taken up in the present chapter. He is chiefly concerned, not with the mental faculties which the several studies are calculated to improve, but with the utility of those studies as a preparation for life. He is surely on firm ground when he declares that we must choose the subjects of instruction on the basis of utility in the broad sense, and that we must then teach them so as to get out of them the needed discipline. But—and it is the duty of criticism not to be overawed by great names—when he proceeds to apply his criterion in detail he makes a false assumption. He assumes that what it is most essential to know in after-life must necessarily receive the greatest share of attention at school. No one can gainsay the vast importance of knowing the simple laws of health; but does this mean that physiology and hygiene should monopolise the greater part of the school time-table? Literature, music, and the fine arts may doubtless occupy only a tenth-part of the time of men and women who have to work hard for a subsistence; but does this mean that they should occupy only a tenth-part of the hours spent at school? We may be quite sure that the rigid application of such a principle would mean the practical destruction of that which rescues many a life from utter sordidness; for "the knowledge and skill which make our leisure valuable to ourselves, and a source of pleasure to others, can seldom be gained after the work of life has begun".[1] Spencer makes altogether too light of the leisure part of life. In spite of his promise to do so, he fails to adapt his curriculum to "complete living"; he fails to interpret the word utility in the broad sense—utility for leisure as well as for labour, for soul as well as for body. And how is this failure to be accounted for? Partly, no doubt, by the materialistic tendency of himself and his time, and partly by his intense individualism, and his dislike of the State as an engine of progress. According to him, those things are of greatest import which enable us to look after ourselves. He sees clearly enough that children are born into a physical world, to which they must be taught to adapt themselves; but does he see so clearly that they are born too

Remarks on the same.

[1] Quick, *Educational Reformers*, p. 451.

into a social and spiritual world, to which, unless life is to be a poor thing, they must also in some measure adapt themselves? Finally, we observe that Spencer makes the fundamental mistake of regarding the whole problem from the side of the adult, and of failing to take into account the child's point of view. He rightly desiderates training in the rearing of offspring; but is childhood the time for such training? He pours contempt upon the military and personal sides of history; but does the schoolboy agree with him? He places in the forefront those sciences which bear upon trades and industries; but in what way does this affect any but the closing years of school life?

The "Herbartian" view.

Another remarkable reaction from the traditional curriculum is that of the "Herbartians". To them is due the immense gain of giving fulness and vitality to the doctrine that the ultimate aim of education is the formation of character, and that accordingly the aim of instruction is the training of the "circle of thought," by means of interest, so that it may give the will a moral tendency. Keeping this supreme purpose in mind, they go on to say that "the branches of learning may be easily and distinctly ranked in accordance with their pedagogical importance,"[1] for "those studies are to be given the preference which work directly for the attainment of the educational aim, and which, by virtue of the content they convey to the pupil, are able to meet the demand for a valuable circle of thought in which moral-religious interests predominate".[2] The human studies thus stand first. History (sacred and profane) and literature take the lead, since these possess the most valuable moral content. Drawing and singing, on account of the close connection between the ethical and the æsthetic, are regarded as supplementary to the first group. Next come languages, constituting the formal side of the literary material, but to be studied only as a means to an end, for "grammatical instruction can claim no such independent position in the school as do the philological sciences in the university".[3] After the human come the nature studies. Geography forms the connecting link between

[1] Rein, *Outlines of Pedagogics* (Eng. tr.), p. 107. [2] *Ibid.*, p. 106.
[3] *Ibid.*, p. 109.

the two great groups; natural science ranks next; whilst last and least come mathematics, the formal side of science.

Remarks on the same.

This theory of the curriculum, like that of Spencer, throws the stress upon one of the principal groups of studies, but its bias is on the literary and historical side. And at first sight it would seem obvious enough that those who contend for the supremacy of the moral aim should, in order to be consistent, follow up that contention by giving a supreme position to those studies which contain great and fruitful moral ideas. But in truth this inference does not go to the root of the matter. We fully admit, and have indeed urged, that the ultimate aim of education is the cultivation of a strong and pure character, and that it is the business of teaching to further that aim. Viewed subjectively, or from the side of the child, the aim of teaching is to develop certain instinctive interests; and the child is interested in nature not less than in man. Viewed objectively, the aim of teaching is to bring the child into helpful relation with that environment amid which his life is to be lived, his character to mature, and his work to be done; and the environment in question is physical no less than social, "natural" no less than human. Among men of letters and men of science there will perhaps always be found strenuous advocates of their favourite pursuits; and among educational thinkers there will perhaps always be found makers of pretty theories who hold aloft one set of pursuits as most worthy. The practical educator, in framing curricula and apportioning time to the several studies, should steer clear of all this special pleading. When his boys grow to be men, some of them will have leanings in the one direction and some in the other; and no one has a right to say that the man who spends his leisure in his workshop or garden or laboratory lives on a lower plane than the man who spends it among his books. The educator's business is to open up the various avenues impartially, until the time arrives when specialisation becomes an imperative necessity.

With another feature of the Herbartian scheme the reader who assents to the principles of choice we have enunciated will find himself in cordial sympathy. It makes short work of merely

"formal" instruction, of intellectual drill for the sake of drill; and insists upon the necessity of selecting in all branches such material as is worth knowing and worth remembering. It seems to make the wanton assumption, however, that mathematical studies must needs be formal; and it underrates the importance of a careful study of language. The accurate use of words is essential to accurate thought about anything, and, unlike the technical *minutiæ* of grammar, is worth acquiring for its own sake.

Summary and conclusion.

The main drift of the present chapter may now be usefully summarised. Our chief contention is that where any subject is found to have won an uncontested place in school curricula, its position is in reality justified, not by its merits as a means of mental gymnastic, which may, however, be solid enough, but by its intrinsic value as a branch of human knowledge. No study can retain its position for long when, its uselessness for life's purposes having been demonstrated, its advocates fall back upon the plea that at least it provides a training for the mind. Verse-writing, Euclidean geometry, arithmetical conundrums, formal grammar, disjointed object-lessons, many of the Froebelian occupations, feats of memory for memory's sake,—all take their places in the list of lost causes. Some of these exercises may furnish excellent gymnastic, but they are not the stuff that men live by. In recent controversies each of them has been attacked in detail, but the educational reformer of our own day has declared war upon all studies that are pursued for the sole sake of mental gymnastic. The following passage, written by an eminent schoolmaster of a former generation, with special reference to the practice of Latin and Greek verse-making, may, from our point of view, be applied equally well to all merely formal studies whatever:—

"As for the disciplinary value of verses [and, we should add, of all else that is taught chiefly for discipline's sake] is it necessary that discipline should be so purely infructuous? Can we teach nothing in heaven and earth which shall be valuable as *an end*, no less than as *a means*? Is it not a sheer blasphemy against the majesty of knowledge to assert that there is nothing worth

teaching which shall be also worth *knowing*? To walk on a treadmill, to dance on a tight-rope, to spin round and round like an Oriental dervish, may be practices which require skill, and involve healthy exercise; but are they preferable to good honest walking? We are told of a certain philanthropist that, when work was slack, he employed his labourers one day in dragging stones from one place to another, and the next day in dragging them back again. Well, he certainly kept them at work, and even such work is, I suppose, preferable to idleness. But would labourers, so occupied, be likely to conceive a high opinion either of the good sense of their employer, or of the high dignity of labour, and its infinite importance in the evolution of human progress? And was not such work a mere waste of organised frivolity? Now we have been exactly imitating this philanthropist by degrading education into a mere discipline, and thus teaching our boys to disbelieve that *anything* was worth knowing, since the immediate end set before them was, to the majority, alike unattainable and valueless. What wonder is it that so many of them have grown up to despise culture, and to disbelieve in the necessity for any kind of intellectual effort?"[1]

REFERENCES

Spencer, *Education*, chap. i., should be read for the stimulus it affords. J. J. Findlay, *Principles of Class Teaching*, chaps. ii. and iii. P. A. Barnett, *Common Sense in Teaching*, chap. iv. In chap. v. of his *Herbartian Psychology*, Prof. Adams pours genial ridicule on the dogma of "Formal Education". For experimental work on the "transfer of training," see S. Colvin's *The Learning Process*, chaps. xiv.-xvi.; Heck's *Mental Discipline;* Henderson's *Principles of Education*, chap. x.; Thorndike, *Educational Psychology*, chap. viii.; Bagley, *The Educative Process*, chap. xiii.; Sleight, *Educational Values and Methods;* C. Fox, *Educational Psychology*.

[1] F. W. Farrar in *Essays on a Liberal Education* (1867).

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CHAPTER VII

THE SCOPE OF SCHOOL STUDIES

"The ideas of men, which are—it is policy to be emphatic upon truisms—are actually the motives of men in a greater degree than their appetites: these are my theme."—GEORGE MEREDITH.

IN discussing the problem of the choice of studies, we have been content to rely provisionally upon ordinary notions of the meaning and scope of the several branches of school instruction; but it would be inconvenient to proceed further without attempting to indicate more clearly and accurately the general idea underlying each of the "subjects" we have mentioned, regarded as parts of a school curriculum. This will help to bring into more distinct relief the conclusions of the preceding chapter, and will clear the way for the work that lies before us. Writers on "school method" have been far too apt to plunge *in medias res,* unmindful of the fact that method is after all only one's way of compassing an end which ought to be made clear at the outset. Let us ask, then, with reference to each branch of instruction, what we are or ought to be driving at in teaching it; what aims we ought to keep in view, so far as these aims are revealed by a study of its essential nature.

Need of studying aims in teaching.

First, a few words upon *religious and moral instruction.* Upon the subject of religious instruction, it is doubtless hard to say the right thing, only too easy to say the wrong thing, but perhaps not very brave to say nothing at all. For silence might be understood to mean that the whole position is yielded to professed theologians and to hot partisans, whereas the duty of an educational writer, here as elsewhere, is to

RELIGIOUS INSTRUCTION.

insist that the nature of the child shall be duly respected, and that the aims of religious teaching shall be made as clear as may be. Wrong aims and bad teaching will produce results which are also wrong and bad, in direct proportion to the magnitude and importance of the theme. For example, the systematic committal to memory of statements which are unintelligible to the learner is a mere weariness of the flesh, and is sure to be followed by dislike of the subject—a fact which is unaltered in its nature, though enhanced in its significance, when the subject is of high import. Next, we must distinguish between what is commonly called religious knowledge and what truly constitutes religious education. The Bible may be used for the purpose of teaching the history, the customs, and the beliefs, of an ancient nation; or its stories may be employed, as those of the *Iliad* and the *Odyssey* may be, in the inculcation of moral lessons; or, as presented in our authorised version, it may be regarded as a great literature, an acquaintance with some parts of which is a necessary ingredient in the education of an English child. But these aims, though their contributory value is not to be questioned, do not of themselves guarantee that the learner shall ever be touched with genuine religious emotion; especially when, as is usually the case, we seek to realise them by the clumsy machinery of examination.

Religious education would appear to consist essentially, not so much in teaching the child this or that, as in cultivating in him a certain attitude of mind towards the world in which he is placed and the life he is appointed to live; for which purpose a very simple basis of belief is quite sufficient. Herein lies the explanation of the acknowledged fact that the person least troubled by the "religious difficulty" is the teacher. The simple recognition of the truth that we walk by faith, not by sight; the simple reference of the mysteries of existence to an unseen power and presence; the simple and reverent handling of carefully chosen portions of the Scriptures;[1] the simple hymn; and the simple prayer: these are the means of religious education upon which the teacher, *quâ* teacher, instinctively relies. When particular

[1] Prof. Moulton's two volumes of *Bible Stories* are an excellent instance of what is meant.

systems of doctrine, implying loyalty to particular religious institutions, come into the question, as they inevitably must, then the "religious difficulty" begins, for religion-in-education is now replaced by religion-and-education. This extended doctrinal instruction must in one way or another be handed over to the churches.

The essentially moral significance of all instruction was sufficiently insisted upon in the first chapter, but it has always been customary to use such incidental means as are afforded by the lessons in Scripture, history, and literature, in order to supplement the indirect moral influence of intellectual interests by ethical instruction of a direct character. The heroes of history, and of the drama, for example, have usually been held up as bright exemplars of the various virtues. Recently, however, the proposal has emanated from various quarters to make direct moral instruction more definite and systematic, and to this end text-books have been written and syllabuses devised. This idea appears to have been suggested partly by the desire to steer clear of the bitter religious controversies that have raged round the schools. Indeed, the proposal, unfortunately for its success in this country, is by some of its advocates coupled with the suggestion that religious instruction should be entirely dispensed with in schools maintained by the State; but this is by no means a necessary corollary.

MORAL INSTRUCTION.

The opponents of formal moral instruction raise the question whether in any case it is possible to teach people to be virtuous. The answer to this question will depend upon the precise meaning of those who ask it. If it is meant that instruction *about* morals does not of itself constitute moral training, the objection is, of course, a sound one, for in the evolution of character it is doubtless true that one virtuous act is worth a thousand virtuous ideas and emotions. But to say that moral instruction can in no wise influence conduct is to commit oneself to a bit of palpably false psychology. A sound psychology knows of no such sharp division between ideas and deeds as is here applied; it rather teaches that an idea tends to work itself out in action, and that this tendency

is in precise proportion to the liveness and actuality of the idea.

Its dangers.

Now this fact at once gives moral instruction some place in the educational scheme, though it points at the same time to grave dangers. First, there is the danger of relying too much upon *mere* instruction, and of ignoring the truth that a moral idea is not effectively one's own until it has been realised in action. But this is only to say that ethical instruction stands in subordination to government and guidance, and that in the specifically moral realm the teacher as authority and guide is more important than the teacher as instructor. Connected with this danger is the further one that such instruction may end in mere sentimentalism, that state in which one has become habituated to mere outbursts of emotion which find no healthy vent in action. The feeling of compassion, for example, is of no more value in itself than the feeling of callous indifference; it is the compassionate act that tells. Unless, therefore, moral precept go along with moral practice, it may be worse than useless, since mere emotion must result in enervation of character. A third danger of systematic instruction is that of suggesting to the child forms of vicious conduct of which he would otherwise have been blissfully ignorant. It has been pointed out, for example, that certain French books for children contain pages of argument to show the iniquity of suicide. A fourth danger is that of making entirely premature casuistic distinctions. Childhood is not the time for nicely balanced arguments concerning the propriety of telling the strict truth in certain crucial cases, nor for any attempt to demonstrate the reasonableness of the weightier matters of the law.

Its place.

On the whole the fair conclusion seems to be that systematic moral lessons, taken perhaps in connection with religious instruction, may under wise management effect much good; for it is certain that clear ideas on such a matter as temperance, or kindness to animals, are an incentive to right conduct, and that moral judgment no more comes by the light of nature than do other sorts of judgment. At the same time, it would seem that the moral lesson is a delicate instrument, not to be confided to any but the ablest hands.

Passing now to the ordinary "secular" curriculum it will be convenient to begin with *the classical languages*. The scholars of the Renaissance valued Greek and Latin on the simple ground of their objective utility. Latin was the only language in which a man could address Europe; Greek laid bare the original of the New Testament; and both Latin and Greek were the instruments by which scholars ardently desired to open out the world of thought and beauty which then awaited re-discovery. Those were days when such a life as that of Browning's "Grammarian" was indeed worth living, for all that then helped towards the revelation of new worlds of religion, philosophy, and literature was surely of as deep practical import to civilised humanity as have been the discoveries of physical science in later years. Add to these considerations the fact that natural science was almost non-existent, and that the great periods of English literature were yet to be, and we can partly see why Latin and Greek became the recognised matter of school instruction, and why education came to be synonymous with the teaching of those languages. Of the languages, be it noted, not of the literatures, for the eloquence of Cicero and the beauty of Virgil lay beyond the comprehension of the average schoolboy; and so, in the hands of teachers of the sixteenth century, of men who followed the lead of John Sturm of Strasburg, education became a finely organised system of linguistic drill. This continued to be the reigning conception of the right instruction of youth until quite recent times; places of education were "grammar schools," grammar and translation were the only things cared for, and the reformers who advocated the claims of literature in the mother tongue were little heeded. When the Reformation caused the official language of the Church of Rome to lose ground, men like Melanchthon and Sturm began to uphold it as a formal discipline, and since the French Revolution dealt Latin its death-blow as a means of communication, the defence of a common classical curriculum has rested still more on its merits as a discipline, the exercise book having been added to the former apparatus of dictionary and grammar. More recently, the astonishing progress of physical science and the increased importance

THE CLASSICS. Origin of classical instruction.

attached to modern languages through the practical obliteration of distance, have brought to the front the real, as opposed to the formal, value of studies. Classical teachers themselves perceive that a barren system of linguistic drill can no longer be defended, and that, if the classical studies are to stand against their rivals, matter must receive attention as well as form. Thus the tendency is to lighten the emphasis which has traditionally been placed upon the technicalities of syntax, the writing of unimpeachable prose, and the making of verses, and to place greater stress upon the literary, historical, and archæological aspects of classical learning.[1] But when we have once got rid of the superstition that there resides in the plying of grammar and delectus a mysterious virtue, whereby mental power is stored up for future use in any sphere whatever; then classical instruction stands or falls on its own exoteric merits; and so there is now a further tendency to reserve it for those whose aptitudes and opportunities are of the right kind. Those who best love and understand the classics are surely those who should fear the issue least.

Recent tendencies in classical instruction.

Students of "the classical controversy" should always remember that the real point in dispute is not whether a knowledge of Latin and Greek is of value, which few, if any, would deny, but whether it is indispensable for all who make pretension to a good education. It is especially needful to bear this in mind in weighing those arguments by which apologists for classical training seek to prove that, over and above the precious subjective discipline to which we have referred, the dead languages possess a material and objective value for all alike. One of these pleas is that Latin assists in the acquisition of certain modern languages, such as French and Italian. The fact is undeniable; but who would seriously maintain that the labour of learning Latin is justifiable on this ground, when one's prime object is the learning of the modern language? Again, it is said that the meaning and use of English words of classical origin are clearer to one who

Arguments for general use of classical languages in education.

[1] *Cf.* the various series of illustrated texts that have recently appeared.

has made some study of the older languages. This must again be admitted; but we may also remark that English words have been used with tolerable point and accuracy by some men, and perhaps by more women, who have possessed small Latin and less Greek. The fact is that the connection of an English word with its classical ancestor is generally obscured by time, and that only words of recent formation are capable of clear explanation in this way. The right use of an English word must be learned by attention to English writers, or, in the case of technical terms, by a knowledge of the subject-matter. In cases where a hint of the origin of a word is really calculated to throw further light upon its meaning and use, the teacher of English may be trusted to supply the hint. Again, it is sometimes held that much of English literature—as, for example, the poetry of Gray and Milton—must remain in great measure unintelligible to one who knows no Greek or Latin. In one sense this is simply a blunder; for ignorance of the classical tongues need by no means imply ignorance of the history and mythology of Greece and Rome. In another sense this argument possesses a grain of truth; but is it worth while learning Latin in order to trace to their sources the Latinisms of Milton's syntax? Lastly, it is still occasionally maintained that classical instruction is the supreme instrument for the cultivation of literary taste. It is, of course, true that constant and direct association with the best models is the only way of forming a correct taste; but when one reflects that only a select minority ever reach the point of enjoying the masterpieces of Greek and Roman literature, the general weakness of the contention is sufficiently apparent. Perhaps, however, the unreality of these forms of special pleading is nowhere better illustrated than in the common praises of the euphonic merits of the Greek and Latin literatures—praises which were freely bestowed at a time when an overwhelming majority of English scholars pronounced the ancient tongues in ways that would have made the ancients gasp and stare.[1]

[1] See the article, "The Supremacy of the Classics, a U. U. Essay," in the *Journal of Education*, April, 1886; and "The Future of Classical Instruction," by A. Sidgwick, *ibid.*, June, 1887.

Instruction in the mother-tongue, which we shall next consider, comprises five distinguishable elements: speaking, reading, writing, composition, and grammar. We will deal with each of these in turn; merely, however, for clearness' sake, and not because each of them should necessarily form the subject of a distinct series of lessons.

ENGLISH LANGUAGE. Five elements distinguished.

The small child on entering school has learned to speak his native language with some degree of fluency, and with a measure of precision which varies greatly according to the character of the home. Putting aside grammatical faults, we find that the defects which depend simply upon the use of the vocal organs fall into two classes: those that arise from bad articulation (*e.g.* the omission of final consonants), and which therefore affect distinctness of speech; and those which arise from incorrect vowel sounds, and which therefore affect purity of "accent". How far it is worth while taking pains to eradicate any but the worst of provincial vowel sounds is doubtless a debatable point, at least as regards the primary school; it may be enough that the bias of the school is on the side of standard pronunciation. But there can be no question that in all schools an attempt should be made to cure that careless articulation which is said to be characteristic of Englishmen, and to which the wealth of double and final consonants in English makes them perhaps peculiarly liable. War should be waged against such abominations as "ax" for "acts," "fixtars" for "fixed stars," "nesrily" for "necessarily," and the like. These points, as well as the general cultivation of the speaking voice, need attention in all grades of schools, as the average performances of pupils on public occasions sufficiently testify. Such instruction would help to cure people of those slovenly defects of speech which are observable in all ranks of society, which are sometimes distressing in ordinary conversation, and always so in public utterances; it would reinforce the study of literature, since much of what is best in poetry and prose is never so fully appreciated as when it is read aloud; it would connect itself with the teaching of singing; and, finally, the early practice of correctly producing English sounds should be of material assistance in the learning of a foreign language.

(1) Speaking.

The art of reading may be understood in different senses which it is important to distinguish. First, it may mean the automatic association of the printed symbols with the corresponding sounds; it is in this sense that the blind Milton's daughters "read" to him in languages that they did not know. Secondly, to this ready recognition of symbols and sounds there may be added an intelligent appreciation of meaning; this is the sense in which the term is commonly used, *i.e.*, with reference to ordinary silent reading. Thirdly, to the preceding elements there may be added those that pertain to reading aloud, which involves all that we have just discussed under the head of clear and audible speech. It is of course impossible to teach a child to read without requiring him to say the words, but except in this limited sense the reading lessons do not necessarily include practice in the elocutionary art. The cultivation of the art of speech must no doubt generally go hand in hand with instruction in reading, but the distinction between the two should be clearly marked, because of the tendency to take it for granted that the latter involves the former, and the consequent tendency to treat vocal culture in an altogether casual way.

(2) Reading.

Teaching a child to read, then, is usually, and properly, understood as training him to the ready association of the printed signs with the spoken language he has previously learnt; and directly this is stated, the essentially instrumental nature of the exercise is apparent. In itself, reading has no more educational value than digging or sawing; and were it not for its utility as an instrument, no one would think of wasting time on the tedious process of teaching children the art of reading. The bearing of this upon the scope of primary instruction is important. As regards the vast number of children who leave school to join the ranks of unskilled labour, the ability to read has little or nothing to do with the business of bread-winning; to them the value of this art resides almost entirely in its effect on their ways of spending their leisure. Unless it helps to raise their lives to a higher plane, by opening up new sources of rational amusement and pleasure, its educational efficacy is indeed questionable, for it is at least as likely to lead them wrong as

Its purely instrumental value.

right. To talk of the effect of education upon crime would be mere windy nonsense, if primary instruction included little or nothing more than the "three R's"; for why should these arts in themselves not conduce to cleverer rascality? Huxley was within the mark when he wrote: "The only medicine for suffering, crime, and all the other woes of mankind, is wisdom. Teach a man to read and write, and you have put into his hands the great keys of the wisdom box. But it is quite another matter whether he ever opens the box or not. . . . I protest that, if I thought the alternative were a necessary one, I would rather that the children of the poor should grow up ignorant of both these mighty arts than that they should remain ignorant of that knowledge to which these arts are means."[1]

Spelling.

Custom requires that the child should learn to spell correctly; in which fact lies the entire value of this accomplishment, and the sole reason why it occupies so much of the teacher's attention. We may as well accept the position quietly, without entering upon a discussion of possible but far-off reforms in the direction of phonetic spelling.

(3) Writing.

All that has been said of the purely instrumental value of reading applies equally to writing. The production of an elegant style of penmanship was formerly regarded as one of the substantive aims of the school, but it is now recognised that the cardinal virtues of handwriting are legibility, and rapidity and ease of production. The flowing curve, the graceful flourish, and the old-fashioned slope of the strokes, are sacrificed to the requirements of utility, the result being balder in appearance, but more in keeping with the real purpose of the exercise, and, what is of still greater importance, attainable without the assumption of unhygienic bodily postures.

(4) Composition.

The practical aim in teaching composition is so to train the pupil that by the time he leaves school he will be able to express with tongue or pen what he knows and feels, in language that is at least correct, clear and straightforward. It is obvious that the art of literary composition, like the

[1] See his essay on "A Liberal Education, and Where to Find It," in *Science and Education.*

rest of the fine arts, can be taught only up to a certain point. A strong and vigorous style is born of strong and vigorous thinking; and the graces of style are possible only when the seeds of indirect suggestion fall on fertile ground. Systems of abstract rules, like those formulated by Campbell and Blair and Whately, though they doubtless have a certain subordinate value, are on the whole barren exercises of the intellect concerning things whose secret eye hath not seen nor ear heard.

In what sense it can be taught.

Still, there is much that the pupil can and should be taught. He can be taught the humble but necessary art of punctuation. He can be placed on his guard against solecisms and barbarisms, tautology and verbosity, ambiguity and pedantry. He can be trained to discriminate between words that at first sight seem equivalent. And he can be taught (though care will here be needed lest a check be placed upon the right sort of originality) how to arrange with best effect the words that make up a sentence, the sentences that make up a paragraph, and the paragraphs that make up an essay. A boy who has been led to understand, for example, that "each" and "every," "fewer" and "less," "difficulty" and "obstacle," are not pairs of convertible terms, and that the position of the adverb "only" may affect the entire meaning of a sentence, has learnt lessons of no mean value. At least to the extent thus indicated, the art of composition may be taught.

Choice of subjects for essays.

Much of what is bad in this branch of teaching would be eliminated if teachers and examiners would bear in mind that expression and composition are really what the words themselves signify. In literal truth, expression is the pressing out into verbal shape of that which already forms part of one's mental store, and composition is the putting together of materials that lie to hand. Hence the folly of setting the pupil to write upon a theme which lies beyond his range of thought and experience, or to which he has never given five minutes' attention. This practice gives direct encouragement to that worst of literary vices, insincerity; for it deliberately trains the pupil to regard language, not as the art of expressing thought, nor even—in the phrase of the French diplomatist—as the art of

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concealing thought, but as the art of concealing poverty of thought. Subjects for essays should be suggested by the pupil's daily round of experience, and by his collateral studies; or else he should receive adequate guidance in preparing his materials. Such help may take the form of a preliminary conversation or of direction to the best sources of information; but by no means should it take the form of providing ready-made outlines. The pupil should be trained to collect the materials and to erect the scaffolding, as well as to construct the building.[1]

(5) Grammar.

It is necessary to add a few words concerning the place of grammar in a course of instruction in English. The vast majority of persons who were ever taught formal grammar would probably, and with ample justification, vote it a dull subject. One potent cause of the dulness lies in the fact that, though grammar is the science of which composition is the correlative art, the two things have often been separated in actual teaching. Regarded thus, grammar falls inevitably into the category of useless, or at least of unutilised, knowledge; and such knowledge receives short shrift at the hands of a healthy-minded schoolboy. We refuse to give grammar an independent position among school studies, because no grammatical lore that is not put to immediate use in the composition of sentences ought to be taught in a school. A certain amount of grammatical instruction is necessary, because, as was implied in the above discussion, many of the difficult points of composition cannot be made clear without using the terminology which grammar supplies; but the amount should be the irreducible minimum necessary for this purpose. The average pupil can well dispense with etymological explanations of irregular inflexions; with exhaustive classifications of strong verbs, of adverbs, and of prepositions; and with the scraps of information about older forms that are commonly served up. For the few who learn afterwards to care for words as such, these matters will acquire an interest of their own, but they must remain caviare to the general.

Its position in the curriculum.

The formal exercise known as parsing should be employed,

[1] J. H. Fowler's *Essay-writing* is an excellent guide on this point for advanced pupils.

though more sparingly than has been customary, as a test of grammatical knowledge. The analysis of sentences is a far more fruitful exercise, because, being the converse of composition, it bears more closely upon the practical side of language, and because it often furnishes a ready means of making clear an obscure passage in a classical author.

Parsing and analysis.

This is not the place for retelling the story of how *English literature* has had to fight its way to a place in the curriculum; we need only note the fact that it is now almost universally recognised as an essential part of a liberal course of instruction. The vast significance of this reform is obvious, when we bear in mind that an intelligent appreciation of good literature goes far to ensure well-spent leisure, that the cultivation of literary taste must always begin with the simplest masterpieces of the mother-tongue, and that for the great majority it must end there. For even of those who receive a secondary education, and who therefore make acquaintance with one or more foreign languages, comparatively few ever reach the point of easy mastery and enjoyment of the corresponding literatures. But the treasure-house of English literature is so vast and so well stored, that sympathy with those who are confined thereto would indeed be wasted.

English Literature.

It is highly necessary to distinguish between teaching literature and teaching the history of literature. To attempt the latter until the pupil knows a good deal of literature at first hand is to put the cart before the horse. A history of speculative philosophy, or of any other system of ideas of which he is ignorant, would be just as intelligible to a boy of sixteen as would be a history of literature. Where such instruction is attempted, the usual result is, of course, that names and dates are made to do duty for ideas.

History of literature not a school study.

Some of the actual works of the great writers must, then, be placed in the hands of the learner. But this of itself is no guarantee that *literature* shall be taught; for everything depends on the way in which the selected works are used. The men who edited the first books and drew up the first examination papers inherited the traditions of classical instruction; and so Shakespeare

was treated, as Virgil and Horace had been treated, not as one who wrote with a single aim, "which was to please," but as a diabolically ingenious purveyor of philological puzzles, recondite allusions, historical inaccuracies, grammatical anomalies, and antiquarian curiosities. The yellow stockings and cross garters of Malvolio, the passing reference to the king's evil in *Macbeth*, the boatswain's cry in the opening scene of *The Tempest*, the "ducdame" refrain in Jacques' song, a variant reading here, or a doubtful stage direction there, were all made the occasions of prosily learned notes, the substance of which might be required by the examiner. What wonder, then, if unfortunate pupils were to be observed "committing the notes on a play to memory, having carefully fastened up the text in order that it might not interfere with the process," and if the name of Shakespeare was ever after associated in their minds with all that is dull and tedious? This verbal scholarship may be all very well for an adult, if only (as Mr. Jowett is reported to have remarked) he can keep his mind above it; but for schoolboys it must be ruled out of the list of possibilities.

Mistaken uses of English literary works in schools. (1) The classical bias.

Of a piece with the philological and antiquarian view of the use of English classics in schools is that which makes them a grammatical drill-ground. The bearing of grammar upon the study of literature is one of those points in regard to which the system of examinations has often led teachers entirely astray. In the course of actual teaching it is sometimes necessary, in order to make sure that the sense is grasped, to require the pupil to parse a word, or to analyse a passage, or to give in plain English the meaning of a phrase. It is a very different matter, however, to require him to be able to parse *any* word, and to analyse and paraphrase *any* passage, in the book. The preparation for such a test immediately resolves itself into an elaborate plan of purely grammatical exercises, combined with the systematic translation of the noblest passages of poetry into bald and tuneless prose. So intent is the pupil upon a close scrutiny of the individual bricks that he never gets a view of the edifice itself. One writer, apologising for the sort of in-

(2) Making them a grammatical drill-ground.

struction in which the pupil is led "to hunt out all the historical allusions, to study the etymology of the most difficult words, to read what the best critics have said about the drama, to paraphrase the more memorable passages,[1] and to analyse them both grammatically and logically," admits that "this is not necessarily the best, and certainly is not the only, way of generating an abiding, an affectionate interest in the great masters of literary expression, and in the best that has been written and thought in the world".[2] We may be quite sure that no such interest ever was or ever will be generated by means like these. As soon might we expect to make boys lovers of animals by prescribing a course of practical anatomy. If a timely Act of Parliament had forbidden examiners to ask candidates to parse, analyse, and paraphrase passages *from prescribed books*, hundreds might have been added to the number of those who now love literature.

(3) Making them a vehicle for the teaching of rhetoric.

Dr. Bain has put forth a view of literary instruction which we should not need to consider, did it not form so striking an example of what may happen when the philosopher, as such, undertakes to guide the teacher. According to him, the study of rhetoric must precede that of literature. The laws of style must first be ascertained; the kinds of composition (description, narration, exposition, persuasion, poetry) must be distinguished, and the qualities of style (clearness, strength, pathos, contrast, simplicity) must be apprehended. Not until he is armed with this rhetorical nomenclature, may the pupil go forward to the study of literature; and for the advantageous use of these weapons the later authors are to be preferred to the earlier, prose writers to poets, and poetry "can come in only by selected passages, exemplifying the qualities and arts of style". "If it is not a waste of time, it is at least great disproportion, to keep a class occupied for months on a play of Shakespeare, or on three books of *Paradise Lost*," since it is the purpose of these exercises to improve our own composition, and "for a model of prose we must refer, not to a poet, but to a writer of prose".[3]

[1] It would be more to the point to paraphrase the more *difficult* passages.
[2] Sir J. G. Fitch, *Educational Aims and Methods*, p. 321.
[3] *Education as a Science*, pp. 354-8.

We have here another instance of proposals to use the English classics in schools for the purpose of teaching what purports to be literature, but what is really something quite different. Just as some have used them for conveying general information about philology, history, mythology, manners, and customs, and others have used them as instruments of grammatical discipline, so Bain proposes to employ them for the purpose of higher instruction in composition. Like the others, he takes most accurate aim—at the wrong mark. Philology, grammar, and rhetoric are no doubt excellent things in their respective places, but their scope and method differ entirely from those which are proper to literature.

Their true use.

Whether the subject be one of Shakespeare's plays, one of Bacon's essays, or one of Scott's novels, the first and last care of the teacher of literature will be that his pupils comprehend the meaning and purpose of the work as a whole, and as a work of art. To the appreciation of its essential significance all verbal and textual criticism must be subordinated. It is not enough to say that the literature lesson should be a source of pleasure to the learner, for the study of grammar and philology may also well yield pleasure if rightly pursued. The difference is that in the latter the chief pleasure is that of intellectual conquest, whereas in the former it is that which accompanies æsthetic judgment. The teacher who in dealing with Shakespeare's *Richard II.* has led his class to understand the dramatic value of each scene in relation to the tragic issue of the whole, to mark the incomparable art with which the dignified weakness of the king is contrasted with the astute strength of the usurper, and to enter into the spirit of the dying Lancaster's noble outburst of patriotism, has indeed done something by way of "generating an abiding and affectionate interest in the best that has been written and thought".

MODERN LANGUAGES. Special importance of considering aims.

The importance of making clear at the outset the general meaning and purpose of a branch of instruction is nowhere more manifest than in the case of *modern languages*. If, for example, an adult student wishes to acquire a knowledge of German or Italian, for the sole purpose of extending his acquaintance with the literature of his

subject, he would perchance do well to begin with the bare outlines of the grammar, perhaps to work a few exercises, and certainly to pass on as rapidly as possible to translation and to the mastery of the special vocabulary he needs. His method is determined by his aim and by his point of departure. Again, a teacher of French who knows that his pupils are soon to begin Latin, and that most of them are to receive a "classical education," will probably have an eye to this portion of their destiny, and may be justified in giving considerable attention to grammar. But even in this case, and still more when the modern language is studied for its own sake, the essential aims, so far as the school is concerned, are of a practical nature. That he should comprehend the language when it is spoken, that he should speak it at least correctly and intelligibly, that he should read in it any prose or verse of common difficulty, and that he should be able to express himself clearly and simply on paper—these should surely be the first-fruits of modern language study, and are, in general, enough for the school to aim at. Those who sneer at this practical ideal, who talk sarcastically of "courier French," and who think that French or German should, in their degree, do for those who learn them what Latin and Greek do for others, must be reminded that practical aims are surely appropriate to a language spoken at our very doors, that to identify a practical knowledge with mere patter is a flagrant *petitio principii*, and that the sort of discipline afforded by Greek and Latin need not be entirely sacrificed, and in any case is not the only sort worth having.

The difference of aim in teaching a dead and a living language is a point of capital importance. If our chief concern in teaching French and German were that a certain number of books should be translated into the vernacular and understood, then we should from the first compare and contrast the foreign with the native idiom, as we do in teaching Greek and Latin. But since our aim is that the pupil should understand, speak, read, and write the foreign language as the foreigner does these things—in short, that he should think in the language—then the less we allow English to intervene the better. Instead of passing from the thought to the English expression, and thence to the foreign expression (a

triple association), we pass directly from the thought to the foreign expression (a dual association). The indirect method, which makes translation prominent, is replaced by what is now technically known as the "direct method," in which translation is conspicuous either by its sparing use or by its total absence. The term "natural method" is sometimes used as an equivalent, on the ground that this is the way in which we all acquire the mother-tongue; but when one considers the vast difference between the unconscious babblings by which an infant approaches the use of language and the conscious efforts of a child of ten or twelve to acquire a second language, the looseness of the analogy is sufficiently clear. The former starts with nothing but an instinctive tendency to talk; the latter starts with a practical command of one language, and perhaps with a not inconsiderable background of ideas about its structure. A second language is acquired "naturally" only when the child lives in a bilingual district, or in a home where two languages are regularly spoken.

The "direct method".

The "direct method" attaches, as we might expect, great importance to preliminary exercises upon the sounds of the foreign language, and a well-prepared teacher will therefore have studied the principles of phonetics; but whether a phonetic alphabet should be taught, and phonetic transcriptions of foreign words at first employed, are questions upon which equally eminent and successful teachers hold different opinions. The next requirement is that the native tongue should be as soon as possible banished from the classroom during the modern language lesson, and that in the earlier years the lessons should mainly take the form of conversations suggested by familiar occurrences, or by pictures, or by the reading-book, preference being given to subjects which bear upon the social life, the history, and the geography of the country whose language is being learnt. Similar topics will also form the subjects of written compositions. Meantime the pupil will, so to speak, grow his own grammar, by entering in a note-book the several forms and rules as soon as he has come across enough instances to generalise upon, the use of a systematic grammar being deferred.

Its chief characteristics.

Whether translation from and into the mother-tongue should in the later stages form part of the instruction is a question upon which opinions differ. Some would drop these exercises entirely, while others would maintain translation, at least from the native into the foreign language, to a limited extent. Those who condemn translation do so on the ground that, since the chief object is that the pupil shall express himself freely and directly in the foreign language, any form of exercise that may beget a habit of mental translation should be avoided; and that, even if this danger is averted, the practice is a useless one, since he who has learnt to express himself in two languages will have no difficulty in rendering in one what he has seen or heard expressed in the other. Those who defend translation hold that the danger just referred to is unreal, provided the practice be not begun too soon, since the earlier work will have laid a solid foundation of "Sprachgefühl"; and that, on the other hand, translation is of great value in giving the pupil a firmer hold upon the linguistic material already known, a clearer insight into the structure of language, and a sounder knowledge of the significance of words.

Translation.

A brief inquiry into the true aims of *geographical teaching* is specially needful, because of the cold neglect with which geography has been treated in the higher schools of this country, and the inadequate notions which have prevailed even where it has received attention. Geography was too long identified with a poor sort of topography; to learn geography was to gain an acquaintance with books and maps which were mere records of the names of capes, bays, islands, countries, and towns. Attempts were made to relieve the monotony by the introduction of map-drawing, and by brief descriptions of such curious objects as cataracts, kangaroos, leaning towers, and strange national costumes. This addition of the stuff of which sailors' yarns are made was not enough, however, to make the subject one which could command the respect of thoughtful teachers. So long as geography was an incoherent collection of facts, it could not rank beside those studies through which there runs connectedness and unity of idea, and teachers

GEOGRAPHY. Changes in conception of the subject.

who reduced geographical instruction to a minimum could not be blamed. But modern geography claims to have unified its facts and to have become a science; and so it has faced the question: In what ways, for what purposes, in reference to what common ideas, does geography seek to "describe the surface of the earth"?

The answer appears to be twofold. First, it is true that, like physics, geography treats of heat and cold, of moving air and water; like biology, it treats of plant and animal life, and, like geology, it is concerned with the formations that occur in the crust of the earth. But whereas those branches of science inquire how things are constituted, and how they can be explained, geography inquires how they are *distributed* on the surface of the earth. If distribution is taken to include relations as well as positions, it may be regarded as the common idea which runs through the subject and gives it unity. Physical geography inquires how the natural features of the earth, its land and water areas, mountains, rivers, ocean currents, heat and rain, are distributed; political geography shows how men are distributed into races and nationalities, and commercial geography, "the science of distances," deals with the distribution of the economic products of the earth.

The last remark suggests the second fundamental feature of geographical lore, *viz.*, that in its final upshot it has special reference to man. It regards the earth as man's dwelling place, studies the facts of distribution with reference to man's welfare, and seeks to make clear the interaction between man and his physical surroundings. The biologist may be as much interested in vermin and weeds as in cattle and cereals; but not so the geographer, unless indeed the vermin be so numerous or noxious as to interfere with man's well-being. This special reference to man was indicated when in a previous chapter we placed geography midway between the human and the scientific groups of studies. Geography holds out a hand to physics and geology on the one side, and to history on the other. The term "historical geography" is sometimes used in a narrow sense to indicate the study of political boundaries at successive periods; but in the wider and

better sense the aim of historical geography is to show how human society in past ages has been dependent on the physical constitution of its dwelling-place, and how natural laws have helped to shape the course of historical events.

The result of geographical teaching should be, then, in the first place, to give the learner a clear mental picture of the prominent features of the earth's surface, the distribution of the great land and water areas, and the general structure of the land masses, including mountain systems, slopes, and plains. These must be distinctly pictured before the river systems and coast lines can be understood; the latter being regarded as dependent on general structure. Then will follow a study of the oceans and ocean currents, the atmosphere and the distribution of climate, and the distribution of plants and animals. This mentally-pictured surface has next to be studied as artificially divided and otherwise modified by man—the subject of political geography. The facts of political geography are to be conceived as in great measure arising out of the physical conditions previously studied.

Aims of geographical instruction.

The difference between the true and the false view of geographical instruction may be well illustrated by reference to the pupil's conception of the meaning of a map. From one point of view it may be said that the main purpose of teaching geography is to enable the pupil to interpret maps readily and correctly. If the map is, for the pupil, merely a flat surface, variously coloured, and studded with lines and dots to which he attaches certain more or less odd names, if he thinks *in* the map, and his thoughts do not go *beyond* the map, then he does not really know what the map means. The various colours of a good physical map should enable him at once to form a mental picture of the configuration of the surface of the country, of the slopes, the watersheds, and the river basins; the irregular lines should at once call up in imagination the sandy or rock-bound coast, the spacious harbour, or the broad river with its towns, its bridges, and its tokens of commercial importance. The habit of seeing the map only, and not the country represented thereby, is entirely fatal to the intelligent study of geography.

Since the middle of the nineteenth century the study of *history* has undergone a remarkable change. Up to that time history was practically a branch of general literature. The form of exposition counted for more than the accuracy of the matter, and no attempt was made by the writer to suppress his political and personal prejudices. The names of Hume, Gibbon, Macaulay, and Carlyle, at once suggest themselves as English representatives of the old school of historians. The scientific historian, however, represented by such names as Freeman and Gardiner, conceives his task very differently. Documents of various kinds are of course the raw material upon which he works. These he subjects to searching criticism, internal and external, in order to ascertain the true facts, and he then proceeds to group the facts and to bring them into just relationship, with a view to orderly exposition. He steers clear of prejudice; he recognises no literary obligation except that of making his meaning clear; he regards it as beyond his province to pass moral judgments, though he may provide material for the student of morals; he makes no pretence of furnishing guidance in the practical conduct of affairs, except indirectly by explaining the origin of existing facts; and, as a historian, he places truth before patriotism. His business is simply to utilise documents and to sift evidence, in order to present a clear and accurate account of some aspects of a nation's progress. If he claimed any collateral value for his subject, it would probably be that an honest study of history makes one less credulous and more tolerant.[1]

HISTORY. Substitution of scientific for literary standpoint in recent times.

Now in what ways does this change of method affect the historical instruction given in schools? In the first place, the pupil, and usually the teacher, will have little or nothing to do with documents. It seems doubtful, though opinions differ, whether the examination of original authorities has a legitimate place even in the higher forms of secondary schools. The facts will usually be accepted at second-hand, with the proviso that the boys in the higher forms

Does this affect the school?

[1] See Langlois and Seignobos, *Introduction to the Study of History* (Eng. trans., 1898).

should be led to note how a great historian assures himself of their credibility. Again, though the historian, as such, eschews ethical and patriotic bias, yet the school teacher could hardly if he would, and probably would not if he could, evade opportunities of passing healthy moral judgments and of cultivating an enlightened patriotism. Those who recommend him to adopt the cold-blooded attitude of the scientific historian little know the human boy with whom he has to deal.

The choice of suitable historical material

The nature of the child must partly guide us, too, in selecting suitable historical matter. It is well that school history should no longer be a fortuitous concourse of facts and dates. It is well, too, that "drum and trumpet history" should be put in its right place, and that the personal doings of kings and nobles should be duly subordinated to the story of a nation's social, intellectual, and industrial progress. But we must remember that a child's interests—and, for that matter, the average adult's—are with persons rather than with institutions. The plea for a broader treatment does not mean that we should try to force the pace by premature excursions into "descriptive sociology". It means rather that the Caxtons and Arkwrights of history should be included in our purview, as well as the Cromwells and Napoleons. It means, too, that instead of making the biography a mere story, no matter how interesting in itself, we should place the hero amid his social surroundings, and that the children should realise how his deeds helped or hindered social progress.

in the primary

The utmost that can be expected in the primary school is that the main features of our national history should be graphically sketched; and in most cases this will be done by expounding the contents of the reading-book. Some little knowledge of the heroes of Greece and Rome may be added; and the Bible lessons should give an idea of the ancient civilisations to which the modern owe so much. In secondary schools the history of Greece and of Rome will be studied, and English history will be broadened so as to include the chief turning points of modern European history. The limitations of time usually forbid that the special study of a

and in the secondary school.

period should be added to the general outlines; and it is probably best that the latter should be strictly adhered to, specialisation being deferred for a possible college course.

Nature-Study and Science. Justification of their place in the curriculum.

The inclusion of *natural science* in any scheme of general education has in recent years been advocated on various grounds. By some this study is regarded as an unrivalled instrument for training the powers of observation; but, as we have seen, this can only mean directing into this particular channel activities which will in no case remain dormant. By others science is advocated because of its close bearing upon practical needs,—physiology because of its bearing upon direct self-preservation, and the mathematical and physical sciences because of their applications in arts and manufactures; but this plea is proper to the technical institution rather than to the school. In the latter the purpose of this branch of instruction is to beget an intelligent interest in the objects that surround us, so that we may really see something when we look at them; and thus to induce a certain mental attitude towards these objects, so that the curiosity with which a young child looks out upon the world may not be nipped in the bud. He who grows up in ignorance of the fauna and flora of his own parish generally lives to regret the omission, in precise proportion to the standard of culture he attains in other ways.

Science, strictly so called, not a subject for the primary school.

Strictly speaking, natural science, like the scientific aspects of language, is only in a very limited sense a school subject, except as regards the higher forms of secondary schools. The systems of generalised truth to which the term science is properly applied can be truly possessed only by being laboriously earned. We *may*, of course, put into a child's mouth the words "matter is indestructible" or "all substances expand when heated" after showing him two experiments in illustration of these general statements, but no procedure could be more nicely calculated to defeat the purpose of these elementary studies of nature. Until the age of fourteen or fifteen, we shall do well to avoid all attempts at general and systematic treatment, and to keep our teaching on the plane

of observation, carefully noting the facts and making easy comparisons and classifications. Further, we shall do well not to confine our attention to any one aspect of nature, but to deal in a plain, common-sense way with the stuff out of which the pupil may afterwards, if his tastes lead him in that direction, excogitate the various -ologies.

"Object lessons."

The attempt to apply to this branch of instruction the Pestalozzian principle of *anschaulich Unterricht* took the form, during the nineteenth century, of what Mr. Spencer has justly characterised as "the well conceived but ill conducted system of object lessons".[1] Schemes of object lessons were commonly devised for the purpose of imparting "useful knowledge," and without reference to the child's experience and interests, so that a child in a city school might perhaps be told much about the rotation of crops, whilst lessons on coal mines and on the manufacture of silk and glass might be given in a school situated in a purely agricultural district. The inevitable results were that, whatever pains the teacher might take to illustrate his lessons suitably, the instruction became, on the whole, merely verbal, and the pupil remained passive. Moreover, the sound principle that elaborate classifications and comparisons are to be eschewed, and that therefore the main interest in each lesson should centre in the object itself, rather than in its relations to other objects, was travestied by lists of lessons on subjects of the most heterogeneous nature, in which thought, as distinguished from observation, was conspicuous by its absence.

Nature-study.

More recently, and under the impulse of certain educational movements in America, the sort of instruction now technically known as "nature-study" has received much attention, and is taking the place formerly held by object lessons. Whether the change will be entirely for the better must depend, however, upon the precise way in which the term nature-study is understood. In some quarters it appears to be a revival of object lessons, with all their faults except that special attention is bestowed upon natural history. Others base the instruction

[1] *Education*, chap. ii.

upon specially prepared reading-books, the contents of which the teacher is supposed to explain and illustrate—a plan which, however well carried out, is quite at variance with the spirit and methods of the true lover of nature. Another view tends to the identification of nature-study with elementary science, and therefore, unless most carefully interpreted, to the premature use of scientific classification and terminology. Still another view is that not only is nature-study distinct from elementary science, but that it should be quite informal and unsystematic, both in its aims and its methods, so much so that it should have no definite place in the curriculum, or at least in the time-table, that it should be a recreative subject outside the serious work of the school, and that it should not be subjected to the tests usually applied to other branches of instruction. On the whole, the safest course is, perhaps, that of combining regular classroom instruction, conducted with the help of suitable specimens and apparatus, with such informal expedients as calendars and journals, school excursions, and junior naturalists' clubs. A course of this kind could be made more and more connected as the years advance, until, when the pupil is about fourteen, the time is ripe for a more orderly and exact training in certain branches of elementary science properly so called.[1]

Science in the secondary school.

The branches usually selected, at least in boys' schools, are chemistry and physics, the reason for the choice being that these are fundamental in character. The cogency of this argument is quite manifest in case the pupil has decided to "specialise in science"; but unless this is so, there is much to be said in favour of the biological sciences, and in particular of botany. The latter needs no very elaborate or expensive apparatus, its inherent interest is obvious, and there is no science more likely to contribute to the pupil's happiness in later life.

We have already maintained the view that *mathematical studies* are to be esteemed an essential part of the curriculum because of their direct practical importance. The opposite view, that their

[1] On the different interpretations of nature-study, see Mr. R. Hedger Wallace's paper in *Special Reports*, vol. x.

value lies in their virtue as a "whetstone of wit," has had a marked influence upon the traditional scope of school mathematics. The story of the Cambridge mathematician, who deemed it the crowning merit of his newly-discovered theorem that it could never be of the slightest use to anybody, not unfairly illustrates the exaggerated emphasis which has been placed upon the disciplinary effects of mathematical studies. "Example-grinding" has been the approved system. The text-books have abounded in examples of an academic, and therefore artificial, character, manufactured for the express purpose of providing mental gymnastic, and the writers have made it their proud boast that they have collected so many thousands of such exercises. To borrow an American metaphor, the pupil has been kept "chewing rubber"—good exercise for the jaws, but an innutritious diet. The plea for mental training and discipline, which properly refers only to the *method* of instruction, has been alleged as a good reason for the deliberate inclusion of useless *matter*. The results have been, first, that mathematics have tended to become academic and unpractical, the more so because they have tended to drift apart from those studies in which they find their applications; secondly, that the amount of mathematical knowledge acquired in a given time has been disappointingly small, for it has been overlooked that, when a principle has been thoroughly illustrated and enforced by apposite examples, the real purpose of a mathematical training is better subserved by passing on to a new principle than by employing time in the solution of pretty conundrums. A healthy tendency is now at work towards making mathematical studies more practical and useful, by keeping in view their applications in pure and applied science, and in matters of everyday concern. It is increasingly recognised, too, that a more extensive knowledge of principles is of greater importance than dexterity in the manipulation of symbols, and ingenuity in the solution of comparatively useless problems. It has been too common to keep the pupil for years wandering in the by-paths of ordinary algebra, when he might easily have been mastering the principles of the differential calculus.

MATHEMATICS. Why they are taught.

Scope of school mathematics.

From these remarks about mathematical studies in general we proceed to deal briefly with the scope of each of the fundamental branches, *viz.*, arithmetic, algebra, and geometry.

Arithmetic.

If we examine the contents of an ordinary treatise on arithmetic, we find that the "rules" fall under two distinct heads,—those which exhibit the general principles of number, and those which, containing no new principle, consist in applying the fundamental processes to certain ideas, chiefly, if not solely, of a commercial nature. This distinction may be set forth as follows:—

Pure Arithmetic.	*Applied Arithmetic.*
Notation and numeration	Units of measurement and weight.
The four "simple" rules	The "compound" rules.
Fractions Decimals Proportion	Rule of Three, Interest, Discount, Stocks and Shares, etc.

Now it will be seen that the column on the left summarises the essential elements of arithmetic; the rules there enumerated form the logical[1] framework of the science, and upon these, and the principles involved in them, the stress must therefore be laid. Quick and accurate computation is of course to be cultivated; but a pupil who possesses only hazy notions of the *rationale* of these fundamental processes, no matter what degree of dexterity he has acquired in computation, does not know arithmetic. Like the rule-of-thumb practitioner everywhere, he will inevitably be "floored" by any unexpected difficulty. "Please, sir, what rule is it in?" is the helpless query of the boy who has learned to "work sums" without mastering principles.

Undue emphasis on commercial arithmetic.

The right-hand column of the above table exhibits those matters to which the fundamental processes of arithmetic are usually applied. It is probably well within the mark to say that one-half of an average arithmetical text-book or examination paper is taken up with these economic and commercial calculations. In the older books, notions like barter and alligation were made the subjects of

[1] Logical, because repeated additions lead logically on to multiplication; cumulative subtractions to division; division to fractions, and fractions to proportion.

separate "rules" and separate strings of exercises; the more modern books discard these oddities, but still lay the stress on commercial affairs. The results of this plan are that the essential parts of the subject are almost buried out of sight, that the applications of arithmetic are unduly restricted in scope, that the treatment of commercial rules is carried so far as to amount to technical instruction for commercial clerkships, that young boys are exercised in a purely academic fashion on matters quite remote from their own experience, and that arithmetic forms no preparation whatever for the more advanced portions of mathematics, because its principles are ignored. He would be a bold man who should say that arithmetical instruction is no longer fairly open to De Morgan's gibe that it is most appropriately called *ciphering,* since intellect goes for nothing throughout.[1]

The study of algebra is commonly reserved for the secondary school. As to its introduction in the later portion of the primary school course, opinion and practice differ considerably. We may remark, however, that boys in the higher classes of primary schools would probably be more profitably occupied with elementary algebra than with the unrealities of commercial arithmetic and the solution of elaborate numerical puzzles, none of which imply further insight into the principles of number. As algebra is usually entered upon, however, there is probably little to choose between the two courses in point of utility; for the pupil is kept so long at what must seem to him mere juggling with mysterious sets of symbols, that he leaves school before the meaning and purpose of these exercises can become intelligible. Simple equations should be reached as rapidly as possible, even if they do not form the mode of approach to the study, and technical processes should be subordinated to practical applications to easy problems.

Algebra: (1) in the primary school;

[1] The same writer points out that "before the end of the sixteenth century the ordinary style of commercial arithmetic, which has prevailed among us [English] ever since, was in course of establishment"; and that "to the commercial school of arithmeticians . . . we owe the destruction of demonstrative arithmetic in this country, or rather the prevention of its growth" (*Arithmetical Books*, p. xxi. of Introduction).

The secondary school, with its larger and more leisurely outlook, will give greater attention from the first to the cultivation of a sense of algebraic form, and to the elucidation of the peculiar difficulties of the subject. Though such propositions as the rule of signs in multiplication must needs be illustrated rather than rigorously demonstrated, yet the pupil must be taught to think his way into the language of symbols, and not merely to acquire dexterity in manipulating them. Algebra as sometimes taught amounts to little more than mechanically evolving from given sets of symbols answers like those at the end of the book. The mischief is intensified by the tendency of modern text-books towards "an excessive subdivision of the chapters. A typical method or example is given and followed by a set of questions of a precisely similar character; then there is another typical example followed by other similar questions, and so on."[1] Clearness is thus gained by sacrificing all opportunity of exercising ingenuity and thought. Moreover, the manufactured examples of the text-books are not those which are usually met with in actual practice later on; and it would probably be better to replace many of them by inverse processes, such as the verification of equations. Most of the "answers" given in the books should never appear at all. The pupil should learn to test the correctness of his work by the inverse process.

(2) in the secondary school.

The value of geometry to one who intends to proceed to the higher mathematics is clear enough; but we certainly need to inquire why it should be taught to all and sundry. Those who regard mental gymnastic as the basis of choice are of course ready with an answer; but that theory we have discarded, for reasons which need not be here reiterated. The value of geometry as a school study lies really in the fact that its truths are both comprehensible to the learner and fundamental in their bearing. A good deal of every one's common thinking is in terms of spatial relations. It is true that ideas about sizes and distances and proportions play a specially important part in the

GEOMETRY: why taught.

[1] H. L. Joseland in Cookson's *Essays on Secondary Education*.

mental lives of those who follow certain trades and professions; but there is no one to whom such ideas are not of daily occurrence, and upon whom instruction in elementary geometry can possibly be thrown away.

Practical or experimental geometry.

The faculty psychology, and the correlative educational doctrine of a formal training of the faculties, have led people to believe that the value of geometry lies almost entirely in its disciplinary aspect; and so it has been customary either to adopt some such rigorous system as that of Euclid, or else to omit the subject altogether. Now we must distinguish between a knowledge of geometrical facts and a knowledge of strict geometrical reasoning; the former may be attained without the latter, by means of experimental and practical illustrations. The mathematical specialist, backed up by the faculty psychology and the "cultivationist" pedagogy, has been accustomed to sneer at geometry of the illustrative and inventional kind, as if a person who has not studied Euclid or some similar system had really no right to know that the three angles of a triangle are equal to two right angles, or that the squares on the containing sides are equal to the square on the subtending side in a right-angled triangle. The sneer would be justified only if practical methods were regarded as a short cut to precisely the same end as that reached by theoretical methods—which is not the point of the contention.

If geometry is to be taught at all in primary schools, and if the younger pupils in secondary schools are not to be prematurely worried with the mysteries of abstract geometrical reasoning, before they know something of the concrete facts, the experimental treatment must be countenanced; and it must be recognised that the practical "proofs" of geometrical propositions, obtained by means of paper outlines, dissected figures, cardboard models and ruler and compasses, have a value of their own, though, from the mathematician's point of view, that value is only provisional. All that needs to be insisted upon is that such instruction, though not rigorously demonstrative, shall not be slipshod; measurements must be exact, and, generally, the methods of the laboratory must be transferred to the classroom.

The study of theoretical geometry will be reserved for the secondary school, and even here will not be continued long in cases where no mathematical aptitude is evinced. The pupil who shows no taste for the subject, and who cannot be brought to see why it is worth while taking the trouble to prove strictly facts that seemed so ridiculously obvious, may well be spared a toilsome march through six books of Euclid. Just as the measurements of practical geometry should be exact, so should the proofs of theoretical geometry be rigorous and well understood. This implies that at certain points a short excursus into the simple principles of logic—or, if the less pretentious phrase be preferred, into the connection of the clauses of a sentence—will be necessary. Only in this way, for example, can the need of a separate proof of the converse proposition be made clear.

Theoretical or demonstrative geometry.

Euclid's *Elements* has long been the system of theoretical geometry recognised in this country, but there are abundant signs that his reign as a sort of sacred text has drawn to its close. Of course there is a certain convenience in having a common standard of reference, but this convenience, it would appear, has been purchased too dearly. Mathematicians and teachers are alike agreed that the defects of Euclid as an elementary course in demonstrative geometry are many and serious. In reducing his assumptions to the smallest possible number, Euclid strains at logical gnats in a manner excessively puzzling to a beginner. He always omits the process of analysis, and never hints at the reason why he finds himself obliged to follow a particular course. He has no idea of generalising the meaning of a term; with him, for example, an angle is invariably a sharp corner, except when in Proposition 33 of Book vi. he hints at angles greater than two right angles. Seeking certainty alone, he makes no distinction between the ways in which we know the meaning of terms; for instance, he defines a straight line by a more difficult circumlocution. Finally, geometry, like other sciences, has advanced both in methods and in nomenclature, and this progress ought to be reckoned with in presenting the subject to a beginner.[1]

Euclid.

[1] See De Morgan's article "Eucleides" in Smith's *Dictionary of Greek and Roman Biography*. For the arguments in favour of the retention of Euclid,

Only in quite recent times has *drawing* taken rank as a necessary part of every one's course of school instruction. Like music, it was formerly regarded as a so-called accomplishment, or ornamental flourish, superadded to the usual curriculum, forming one of its "extras," and supposed to be specially appropriate to the needs of young ladies. But apart from these restrictions, the teaching left much to be desired. The drawings were often insincere copies of other drawings, produced by the united efforts of pupil and teacher, and perhaps chiefly by those of the latter. The first attempts in this country to make drawing part of a general education were those of the South Kensington authorities. Their schemes were, however, dominated by the idea of improving design in manufactures, and therefore made much of freehand drawing from conventional patterns and from geometrical models, to the exclusion of the best elements of the older plan. In this there seems to be a confusion of the aims of a general education with those of technical instruction, and the changes that followed the Report of the Commission of 1889 accentuated this confusion in the curricula of the primary schools. Besides this, the stress laid upon mere copying, and the absence of concurrent practice in original design, tended to defeat even the one-sided aims which the scheme of instruction was intended to accomplish.

DRAWING. Its justification as part of a general education.

Setting aside the improvement of design, then, as an inadequate guiding principle, what, we may ask, are the true aims of drawing in a general education? Some have answered this question by pointing to the numerous trades and professions in which drawing is useful or indispensable, but this again is the concern of technical instruction. A subject which is useful to one who is to enter the building trade or the engineering profession need not therefore be inflicted on one who is to become a labourer, a shopkeeper, a lawyer, or a physician. Others have answered our question by enumerating the various forms of indirect discipline which drawing affords; it is claimed that drawing tends to develop clear and

see the entertaining volume, *Euclid and his Modern Rivals*, by C. L. Dodgson (Lewis Carroll); also the essay on "Elementary Geometry" in Todhunter's *Conflict of Studies*.

accurate observation, that it imparts steadiness and delicacy to the special organs of touch, that it helps to the retention of mental images, that it exercises the constructive and inventive imagination, and that it yields a training in habits of order and neatness. Now there is doubtless much truth in all this, for drawing, like other studies, has its own special psychological place and value. But as in other cases this kind of plea is in itself insufficient. In the first place it is by no means clear that these results could not be secured in other ways; and, in the next place, mere considerations of discipline are no guide to the content of the drawing course, for the discipline above described might well be secured by the delineation of what is ugly, immoral, or, at best, meaningless. The fact that the scheme of instruction that long held the field in our primary schools drilled the child for two years in drawing isolated lines of various sorts may be cited as an apt example.

The true defence of drawing as an element of general education appears to lie in its utility as a means of expression, representative or ideal. Skill with the pencil may be made a means of furthering almost every other school pursuit, whether literary, as in the case of history, or scientific, as in the case of nature-study. And after school life is over, the skill attained *may* serve in the trade or profession selected; and it certainly *will* serve, like musical taste and skill, to raise the tone of the leisure part of life; for " in the temple of Art, many who can never stand on the pinnacle may find a safe corner near the ground ". Humble efforts will find their reward in sympathetic appreciation of the noblest examples of art, and in the new delights with which the home and the common things of life may be invested. But these results will not be realised by drilling the pupil in the mere grammar of form.

Plastic art.

Precisely similar remarks apply to plastic art as an element of instruction. As the drawing exercise is founded upon the child's natural tendency to express himself with paper and pencil, so clay-modelling answers to the instinct which exhibits itself in the making of mud pies and snow men. It might justly be maintained that modelling is in some respects

superior to drawing, since the former treats things as they really are, whilst the latter reduces them to two-dimensional form. At any rate there can be no doubt that the moulding of geographical forms is an exercise of incomparable value in that department of instruction, and that a rudimentary love of the beautiful may be promoted by the modelling of suitable natural objects.

MANUAL INSTRUCTION.

Manual instruction has, like drawing, been recommended and defended on a variety of grounds. According to its more enthusiastic advocates, there are few intellectual or moral excellencies which it does not directly foster;[1] whilst others advance the crudely utilitarian plea that the use of wood-working tools is a widespread necessity. All that we have said of instruction in drawing seems, however, to apply here with at least equal force. Unless it is connected with the rest of a child's occupations, and is thus made a real means of self-expression; unless, too, it is used to further the ends of rudimentary artistic training, it is extremely difficult to vindicate the claims of this occupation to a place in a general course of instruction. And even for these purposes an easily manipulated material like clay would seem to possess advantages over wood and iron for school purposes. If it be further contended that the school workshop tends to breed respect for the dignity of labour, the point must be conceded; but with the reservation, first, that this excellent end is attainable in other ways which should be alternative, and, secondly, that the products of such labour should be useful or beautiful, and should not be chosen for the purpose of mere formal drill in the use of tools. One system keeps a boy for a long period making fragmentary wooden joints, which are certainly devoid of beauty, and as certainly devoid of utility except as firewood. Sloyd was a great advance on this, but its advocates, eager to transplant the system bodily from the land of its birth, forgot how largely in our own country iron is used for making articles which in Scandinavia are made of wood.

In the instruction of girls, the manual employments above discussed are usually replaced, wholly or in part, by certain of the

[1] See Salomon's *Theory of Educational Sloyd.*

domestic arts, and notably by needlework and cookery. Clearly, however, the parallel is not complete, for whereas comparatively few boys will afterwards find any direct use for the manual arts usually taught in schools, there are few girls who will not need to sew, and perhaps to cook, and fewer still who will not play their part in life the better for having learnt. Their almost universal importance to adults is not enough, however, to justify the inclusion of these arts in the curriculum, unless it can be shown also that they lie within the area of the pupil's interests, for otherwise we should be prematurely forcing upon her a species of technical instruction. But this condition seems in most cases to be sufficiently satisfied by the child's tendency to imitate her elders; for a girl commonly exhibits an early desire to imitate those about her in the use of the needle and perhaps in some of the operations of the kitchen. Now since these two conditions are generally satisfied, practically *universal* adult necessity and juvenile interest, the propriety of teaching a girl to sew and to cook will depend entirely upon the way in which the teaching is done; and here certain cautions must be entered. First, these exercises must be kept within narrow limits, so as not to press out other studies which, though perhaps looming less large in adult life, are also less likely to be undertaken at a later period. This caution is the more necessary because the superintendence of these branches of teaching is usually entrusted to specialists, who are only too apt to apply the cobbler's maxim—there's nothing like leather. Next, the instruction should be practical, and books should be avoided, especially that class of publications known as "domestic science readers". Lastly, the instruction should be designed to make the pupil observe and think, so that blind acquiescence in recipes, and all else that is merely empirical, is as far as possible avoided. Provided these requirements are fulfilled, we may with clear consciences include some of the domestic arts in any scheme of general education for girls, until some one shall show, what has not yet been shown, that these arts, when pursued with intelligence and insight, are less liberal than some others which by common consent find a place in the curriculum.

DOMESTIC ARTS.

Vocal music is now generally recognised as a necessary element

of the course of instruction in schools of all grades. Experience has amply shown that the proportion of children who are quite inaccessible to skilful teaching is insignificant, and that we are therefore no longer justified in regarding singing as an " extra," reserved for the few who show unusual promise. Music ranks with literature as one of those subjects which prepare all alike for rational ways of employing their leisure. As in other departments of instruction, clever pupils may subsequently receive an elaborate training, but the chief business of the school is to lay such a common foundation of musical knowledge, taste, and skill as may afterwards be built upon according to the measure of the pupil's powers and opportunities. Vocal music is in a double sense a sufficient foundation; for, on the one hand, inability to perform upon an instrument by no means excludes one from the moulding and refining influences of good music, and, on the other hand, vocal exercises are regarded as the best preparation for an extended musical training.

MUSIC.

In recent times, and especially since the elaboration of the sol-fa system, singing " by note " has largely replaced singing " by ear " in elementary instruction. The value of this reform can hardly be over-estimated, inasmuch as it adds power to knowledge; but in applying it certain mistakes need to be avoided. First, it must be remembered that the learning of songs need not wait upon progress in sight-singing. Just as a child learns verses and hears stories which he is as yet quite unable to read, so he may and should learn appropriate songs " by ear " which are far in advance of his skill in reading music. Secondly, in their anxiety to train pupils to perform accurately to technical exercises of sight-singing, teachers have frequently forgotten that these exercises are not an end in themselves. The " reading " of music bears in fact the same relation to school songs as the reading of English bears to school literature; in each case the mere power to use a tool may just as easily be employed for evil as for good. Unless the school confer upon its pupils a taste for what is musically pure and elevating, it had perhaps better omit music altogether. Above all, the national songs and folk-songs, that have proved their qualities by surviving the ravages of time,

should be freely drawn upon for the purpose of storing the musical memory. To neglect these for the *ad hoc* stuff that is so abundantly purveyed for use in schools is like ignoring Shakespeare and Tennyson in favour of the poets of the local newspaper. There will, of course, be scope for sense and discretion on the teacher's part in the matter of choosing songs from these sources. He will not favour songs of revelry and of love, though the naïve simplicity of some of these surely makes them "safe" enough. Patriotic and sea songs, and songs "for auld lang syne" may, of course, be more freely drawn upon.

The sol-fa system, when used, should be regarded as introductory to the universally recognised notation. Of the immense impulse that has been given by the former to musical knowledge among the masses of the people there can be no doubt. Still, there is every reason why some knowledge of the old notation should be grafted upon the sol-fa, at least in the last year or two of the primary school course. If in the secondary school the staff notation is used from the first in the teaching of singing, the movable-doh plan is acknowledged to be the best.

PHYSICAL EXERCISES.

The child's natural tendency to promote his own health and strength by incessant exercise receives a more or less decisive check as soon as he embarks upon his school career, for he is then required to sit or stand in prescribed positions for some hours each day for purposes of instruction. When all has been done that can be done to improve the hygienic conditions of school work, and when due allowance has been made for such out-of-door instruction as can be given, it remains true that school life is, on the whole unfavourable to sound physical development, unless counteracting agencies are at work.

(1) Games.

Such agencies are supplied, at least in part, by the well-known games and sports which stand as modern representatives of traditional forms of recreation, such as cricket, football, hockey, tennis, fives, racquets, rowing, fencing, running, and leaping. Upon the number and variety of these pastimes, and the skill and enthusiasm of their devotees, no country in the world has a better right than our own to pride itself, and it would be difficult to over-estimate the physical and

moral advantages which they offer, when pursued under proper conditions. It will be instructive to note one or two of their leading characteristics. They are pursued primarily for the sake of the games themselves, and only indirectly for the sake of the exercise they afford, the right development of the body being no part of the conscious object of those who take part in them. This circumstance, while it accounts to some extent for the zest with which the games are played, has been alleged as one of their deficiencies from the point of view of symmetrical physical development, for " the lower limbs and the right arm have the lion's share of the exercise in almost every one " of them, and to the eye of the expert " it is as easy to tell from the general development of any youth what recreative exercise he has practised when at school, as it is to tell from the conformation of the chest whether a man pulls on the bow or the stroke side of his college boat ".[1] The validity of this argument would appear to lie chiefly, however, against the exclusive pursuit of one kind of recreative exercise, for when a sufficient variety of games is played, it will go hard if those parts of the body which most need development do not get it. Again, we note that each of these games and sports assumes the aspect of a contest between two sides, and this, it is alleged, is a source of weakness as well as strength; of strength, because of the fine opportunities the games afford of cultivating self-control and a sense of honour and justice; of weakness, because they lend themselves so easily to the purposes of the mere sight-seer and of the gambler. The *primâ facie* force of the latter contention is unfortunately obvious enough; the fault, however, lies not in cricket and football, but in the morals of the period.

(2) Formal gymnastics.

A belief in the shortcomings of popular games, as well as the spread of education and the consequent need of exercises that might counteract the bad tendencies of schoolroom life, led to the adoption in this country, during the latter half of the nineteenth century, of schemes of formal drill, carefully devised for the purpose of exercising the various muscles, like those systems which had been successfully advocated

[1] Maclaren, *Physical Education*, p. xlvii.

earlier in the century by Jahn in Germany and by Ling in Sweden. As early as 1861 these systems were somewhat unsparingly criticised by Mr. Herbert Spencer on the ground of their factitious character, their monotony, and the absence from them of that agreeable mental excitement which is so important an element in the sportive exercises we have just discussed.[1] When gymnastics are regarded as an adequate substitute for games, these strictures are certainly fair; but they lose their force when the stress is placed rather upon the prophylactic and therapeutic virtues of formal exercises. It has been abundantly proved that gymnastics, if carefully adapted to individual requirements, are most beneficial in cases of constitutional weakness and of defective development; and even where growth and development are normal, they are used with good results in order to prevent the evils incident to the customary sitting posture. Though gymnastics are essentially formal and corrective, and therefore comparatively uninteresting, they will probably remain as a supplementary means of physical training. It is noteworthy that Ling, whose system, on account of the mildness of its regimen, is widely used in the education of girls and of young children, was led by his own physical weakness to devote his attention to the subject.

REFERENCES

[The aspect of teaching which I have thought it best to isolate for special study in this chapter is usually treated in connection with that with which I shall deal in Chapter IX. The list of references will therefore be more conveniently given at the end of that chapter.]

[1] See his *Education*, chap. iii.

CHAPTER VIII

SOME MAXIMS OF METHODICAL PROCEDURE

"Wise saws and modern instances"—SHAKESPEARE.

THE problem which has engaged our attention in the two preceding chapters, that of selecting the material of instruction, lies to a great extent outside the province of the teacher as such, for, as we have seen, the school curriculum represents roughly what, according to the general opinion of the time, is best worth knowing, and so it is decided largely by legal enactment, and by examining and governing bodies operating under legal authority. The teacher may exercise some discretion within the limits so laid down; he can do no more. But we now approach a class of problems which are, or should be, peculiarly the teacher's own province. When the material of instruction has been broadly determined, there remains the task of so disposing and manipulating that material that the general aim of instruction—that of evoking a living and abiding interest in some of the worthiest objects of human thought and endeavour—shall be best attained. Here the teachers are, or should be, on their own ground; and it is upon their liberty in this department, and upon the skill with which they use their liberty, that their right to be recognised as a profession largely depends. Everything that tends to limit the teacher's freedom in this sphere, tends *ipso facto* to reduce his occupation to that of a mechanic.

The scope of this part of our inquiry will be best indicated by an enumeration of the main problems that await solution by a teacher, when he finds himself confronted by a school and by a broadly-defined curriculum. First, viewing the curriculum as a whole, he must determine how its various

Problems of method.

parts are to be arranged, and in particular whether there are good reasons for placing some subjects early and others later in the course of study. Secondly, he must determine to what extent the various studies are to be treated independently, and to what extent they should be correlated. Thirdly, looking at each branch of instruction separately, as far as that is possible, he must determine the right succession of the topics which it includes, whether these be the rules of arithmetic, the events of history, or the facts and laws of science. Fourthly, still narrowing the extent of the subject-matter, he must examine the order of treatment that will generally be observed in giving a lesson, or a series of lessons, on any particular topic. The order of studies, the correlation of studies, the arrangement of topics, and the steps of the teaching process,—these are the great outstanding problems of instruction. The first is usually the concern of the head master of a school, and the last that of the class or form master, whilst the second and third are not so distinctly assignable.

General nature of method.

It will be seen that the problems here stated have this characteristic in common, that they all involve questions of arrangement and sequence. They constitute, in fact, the province of educational method, properly so called. The term method is so frequently used in educational discussions that it will be well to examine it briefly. It is used with varying degrees of precision in common speech, in the various sciences, and in logic. In ordinary language method signifies orderly procedure of any kind, as when we say that one cannot succeed in study or in business without method. In science the term is applied to any general way of dealing with data, in order to reach valid and useful results, as when we speak of the method of solving a problem, the method of fluxions, the Linnæan method, or the introspective method of psychology. The logician, again, uses the term in many different connections, as when he speaks of inductive and deductive methods, experimental methods, the Baconian method, and so forth. More strictly, however, the logician defines the doctrine of method either as the study of the processes by which our thought endeavours to systematise our experience, or as the study of the art of expounding to

others the systematised results of our thinking. In the former sense, method embraces the whole of what is commonly known as inductive logic; in the latter sense, the problem of logical method corresponds closely with that of pedagogic method; but this part of logic has little to offer in the way of definite doctrine.

Pedagogic method.

In all these various senses in which the term method is employed, we discern one common element. Each of them implies a way or mode of orderly progression, and this in turn implies a starting-point, a destination, and a road between. Applying this idea to the specific matters before us, we see that, whether the problem be that of planning a year's or a term's work in a given branch of instruction, or of planning an hour's lesson on a given topic, three preliminary questions will always present themselves to the thoughtful teacher: first, What is my aim? secondly, What is the proper point of departure? and thirdly, Where lies the path between? Whether he can answer these questions satisfactorily will depend upon his knowledge of the subject, of the child's present mental store, and of the child's natural mode of adding to that store.

Two methods illustrated.

In setting forth the facts and principles of any branch of instruction for the benefit of a beginner, we may proceed according to one or the other of two broadly distinguishable methods, both of which are amply illustrated in ordinary treatises on logic. A good instance of the contrast, referred to by Jevons, is seen in the treatment of elementary astronomy by Herschell and by Lockyer respectively. The former "supposes a spectator in the first place to survey the appearances of the heavenly bodies and the surface of the earth, and to seek an explanation; he then leads him through a course of arguments to show that these appearances really indicate the rotundity of the earth, its revolution about its own axis and around the sun, and its subordinate position as one of the smaller planets of the solar system". The latter "commences by describing the sun, the centre of the system, and successively adds the planets and other members of the system, until at last we have the complete picture; and the reader who has temporarily received everything

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on the writer's authority sees that the description corresponds with the truth ".[1] A like general contrast may be drawn between two different ways of presenting the materials of any branch of instruction. In teaching a language we may, at the outset, place in the pupil's hands a complete grammar, require him to take its contents on our authority, and afterwards apply and verify its forms and rules in reading and in composition; or we may begin with easy sentences, spoken or written in the foreign language, and lead him gradually to detect and to formulate the laws of its grammar. In the case of geography, we may adopt the order of a systematic text-book, beginning with the earth as a whole, giving definitions of axis, equator, meridians, continents, oceans, islands, and the like, at length reaching the more detailed treatment of portions of the earth's surface; or we may begin with the immediate surroundings of the learner, and introduce gradually the more general aspects of the study. In learning to read and write, the child may begin with the letters, proceed to combine these into syllables, syllables into words, and at last words into sentences, or he may almost at once be introduced to easy words and sentences. Geometrical notions may be approached by way of abstract definitions or by way of concrete illustrations. We may introduce the principles of mechanics by formal definitions of terms like matter and force; or we may postpone the attempt to define these until much has been done by way of simple experiment. Chemistry may begin with definitions of elements and compounds, combining weights and proportions, atoms and molecules; or these may similarly be postponed until a considerable knowledge of chemical facts has been gained by means of observation and experiment. In learning to draw, the child may begin by being drilled in the elements of form; he may be required to draw lines and angles of various sorts, taking it on the teacher's authority that this tedious work will be useful afterwards when the elements come to be combined in representations of objects; or he may begin with the objects themselves, and work for accuracy less directly and more gradually.

[1] *Elementary Lessons in Logic*, Lesson xxiv.

The question now arises, What are the respective functions in the instruction of the young of the two methods thus generally illustrated? In answering this question we must bear in mind that, (though the teacher's direct object is that of extending and systematising the child's knowledge, yet he cannot be held to have succeeded in his task unless he has aroused interest, stimulated the spirit of inquiry, and promoted the child's self-activity.) Now these all-important by-products of the process can be obtained only in one way, and that is by shunning all plans in which the child "temporarily receives everything from the [teacher's] authority," and by approaching the subject from the child's own standpoint. Whatever be the study into which we are to initiate the pupil, he will, if he be fit to begin it, possess a certain background of relevant ideas, part of his multitudinous experiences; and it is with these ideas that the teacher has first to reckon. This background of knowledge will precisely resemble the knowledge which Herschell, in the example we have quoted, attributes to his supposed student of astronomy; and we therefore conclude that his is the general mode of treatment to be adopted. We must begin with the learner's present store of ideas; cause him to extend these in suitable ways, by reading, observation, experiment, and so on; and gradually reduce the knowledge thus gained to order and system.

Place of these two methods in teaching.

What now are the general characteristics of the method of instruction thus illustrated? For it is only by singling out its general features, and bringing them into bold relief, that we are likely to gain much that will afford us adequate guidance in teaching. Now the literature of pedagogy has accumulated a number of maxims relating to method, each of which emphasises some special aspect of the kind of methodical procedure we have exemplified, and each of which is frequently illustrated in good teaching; and perhaps the best way of bringing out the points we require will be to pass these maxims in brief review. Moreover, as they are probably more often quoted and applied than any other part of educational theory, and as their value depends entirely

Characteristics of pedagogic method brought out by certain maxims.

upon the intelligence with which they are interpreted, it will be well to devote some space to their consideration.

Proceed from analysis to synthesis.

If we ask what are the common characteristics of the knowledge which, in all such cases as those we have supposed, the learner brings with him to the appointed task, the answer would appear to be that it is relatively incomplete, indefinite, and incoherent. The business of the teacher is to make it relatively complete, definite, and coherent; and he is to bring about these results in ways that will make the matter taught a source of abiding interest. This is perhaps the most general statement that can be made about the method of instruction. Now, to say that a child's knowledge is a complex and vaguely apprehended whole implies, in the first place, that the method of teaching must start with analysis, which is characterised by the resolution of a complex whole into its parts. But that is not all, for throughout the analytic treatment the teacher will have finally in view a more or less perfect synthetic treatment, in which the complex whole is viewed as a construction out of the simpler constituents yielded by analysis. For example, though linguistic rules and forms may be got at analytically, so that the pupil makes his own grammar, yet the ideal worked towards is a systematic outline of grammar, which is at length put into his hands. And though the principles of geography will be taught at first by an analytic treatment of the pupil's immediate surroundings, yet the notion of the earth as a globe will be introduced early, as a step towards the synthetic treatment adopted in formal treatises on the subject. The same principle applies, not only in a lengthened scheme of instruction, but also in the treatment of a single topic; first the vague, unanalysed whole, then the analysis, and, lastly, the synthesis. We conclude, then, that the general method will be neither purely analytic nor purely synthetic, and that if we want a single descriptive term for the true method of instruction, we must adopt some such unlovely compound as Dr. Laurie's "analytico-synthetic".[1]

The attempt to introduce definiteness and system into knowledge that has been gained by observation and experiment implies

[1] *Institutes of Education*, p. 277.

that we have to lead the learner to appreciate abstract terms and propositions relating to the matter in hand; indeed it is sometimes said, and with much justification, that a person is educated in proportion to the number and kind of abstract truths which enter, in a real and effective sense, into his mental equipment. Now what we call an abstraction is no abstraction at all for the pupil unless he has reached it by his own efforts (aided or unaided)—in the analysis of the concrete instances out of which it springs. Thus the fundamental rule of method is sometimes expressed by saying that it is a procedure from the concrete to the abstract. "Our lessons," says Mr. Spencer, "should start from the concrete and end in the abstract." The general soundness of this maxim is obvious enough: examples and details must precede rules and formulas, whether in the region of science or of language. There are, however, certain dangers to be avoided in applying this maxim. The very emphasis which has been placed by educational reformers upon the necessity of *starting* with the concrete may cause a teacher to commit the fatal mistake of *remaining* in the concrete. The writer has, for example, known cases in which a teacher has refused to allow a child to state an arithmetical fact without direct reference to actual objects; the twelve bricks or marbles or dots must be there, and must be counted, or (with a still stronger dash of pedantry) must at least be named, long after the child is quite able to make, with full meaning, the abstract statement that seven and five are twelve. Again, though it is a sound principle that requires the beginnings of nature-study to consist in observing carefully the one object under consideration, yet teachers are sometimes too solemnly exhorted to postpone everything that pertains to scientific classification and abstract law; these must not indeed be forced upon the pupil, but, conversely, he must not be forced away from them, when, in the judgment of the teacher, the time is ripe for easy classifications and abstractions, for this would be deliberately and artificially to keep the learner upon the lowest plane of knowledge, and thus to bring about "arrested development".[1]

Concrete to abstract.

[1] *Cf.* James, *Talks to Teachers on Psychology*: "To hear some authorities on teaching, however, you would suppose that geography not only began,

There is the further danger that, having reached the abstract, we should be content to remain there. This is to interpret too literally Mr. Spencer's statement that our lessons should "end in the abstract". A grammar lesson that ends with an abstract rule or definition, or a lesson in physics that ends with an abstract law, or a lesson in geometry that ends with an abstract proposition, is a lesson only half-finished. For the sole function of an abstract truth in the mind's economy is to throw light upon hitherto unexamined concrete details; otherwise, the abstraction becomes a piece of useless knowledge, to be stowed away in the mind's lumber-room.

Known to unknown.

Another favourite maxim of instruction is that we should proceed from the known to the unknown. Not only must we start with what is known vaguely and incompletely, and proceed to introduce clearness and fulness into the child's ideas, but we must then go on, step by step and step after step, to arrange the topics of instruction so that those that precede shall lead logically to those that follow, and form for them appropriate "apperception masses". If a lesson is to beget interest and attention, it must contain elements both of familiarity and of novelty. A pupil is wearied, on the one hand, by the elaboration of what is familiar or obvious, and on the other by the presentation of facts that find no points of connection with his previous knowledge. The avoidance of both these kinds of dulness is what we chiefly mean when we say that teaching ought to be interesting. There are some who fear that modern education tends to relax the pupil's moral fibre by making things too easy and pleasant.[1] But interest is not the same thing as amusement,

but ended with the school-yard and the neighbouring hill, and that physics was one endless round of repeating the same sort of tedious weighing and measuring operation; whereas a very few examples are usually sufficient to set the imagination free on genuine lines, and then what the mind craves is a more rapid, general, and abstract treatment" (p. 151).

[1] This is a favourite thesis of the "harder" school of pedagogy. "It is no doubt," says J. S. Mill, "a very laudable effort, in modern teaching, to render as much as possible of what the young are required to learn, easy and interesting to them. But when this principle is pushed to the length of not requiring them to learn anything *but* what has been made easy and

and is not incompatible with a certain amount of drudgery. That teacher has succeeded who has so far interested his pupils that they are ready on occasion to face drudgery in their eager pursuit of knowledge. And one principal way of securing such interest is observance of that law of the mind's working, roughly expressed by saying that we must proceed from the known to the unknown.

Simple to complex.

We are now able to put into its right place the maxim that bids us proceed from the simple to the complex. For that which is simplest relatively to one who is fully versed in a department of knowledge is not the same as that which is simplest relatively to one who is beginning to study it. To one who knows geometry the abstract notions of point, line, circle, etc., are the simplest; and in this sense a system like that of Euclid proceeds from the simple to the complex. If the maxim meant only this, it would obviously stand in flat contradiction to the one which tells us to proceed from the concrete to the abstract. But it means also that in the case of the young learner we should begin with the concrete unanalysed notions gained from common experience, which to him are the simplest, and that we should go on to unfold their complexity (which he is as yet unaware of) by a process of analysis. The older pupil who has already apprehended the simple and abstract notions will have no difficulty in beginning with them. Where precisely we shall begin, what precisely we shall fix upon, in any given case, as the simplest ideas for the learner, must depend upon our knowledge of his mental equipment. Take, for example, the study of history. One writer would have us begin, "not certainly by plunging at once into the story of Julius Cæsar and the Druids," but by making "some simple and fundamental historical ideas intelligible—a State, a

interesting, one of the chief objects of education is sacrificed" (*Autobiography*, pp. 52-53). Upon which we remark that the teacher who is intent on making his pupils really understand what they are doing need not flatter himself that he is likely to succeed too well in making things "easy and interesting". It is a different matter, of course, when we attempt to smooth the way by evading difficulties that ought to be faced. This (to use a simile of De Morgan's with reference to easing the inherent difficulties of mathematics) is like easing a ship of war by throwing her guns overboard. She looks as like a ship of war as ever—until the occasion for fighting arrives.

nation, a dynasty, a monarch, a Parliament, legislation, the administration of justice, taxes, civil and foreign war ".[1] Now, an arrangement of this kind might suit an adult who, though almost as ignorant of history as a child, has yet had considerable experience of life, and, having kept his eyes open, is prepared to assimilate this array of abstract notions. But the teacher who adopted this plan of introducing a child of nine or ten to the study of history would almost certainly fail. A strong dramatic instinct, a keen interest in stories of all kinds, and perhaps a growing preference for stories that are true—these are the humble sling and stone with which the child is equipped; and it is with these that he must be helped to make his first conquests in the field of history. Ideas about dynasties and parliaments will gradually be insinuated as the course of instruction proceeds, but they must bide their time. The teacher who begins with Cæsar and the Druids is so far right at least, that he has shown truer insight into the nature of the child.

Follow nature.

The method we have exemplified is sometimes described by saying that it obeys the maxim that we should follow nature. A glance at the dictionary shows that the word " nature " is of kaleidoscopic import, and history shows that it is indeed a word to conjure with, in the realm of educational theory not less than in any other. Sometimes it means the world of matter and of blind physical force. At other times it refers to the condition of the savage, the " state of nature " signifying the absence from human life of all that constitutes civilisation. It is in the former sense that the word is used when we are told to leave the young offender to the discipline of nature, on the principle that the burnt child dreads the fire; and it is in the latter sense that it is used when education is spoken of as a natural, *i.e.*, an instinctive, process, like the up-bringing of its young by an animal. " As soon as education becomes an art," writes Rousseau, " it is well-nigh impossible for it to succeed." On the contrary, not only is education an art, but it is a complex and difficult one, in which, though we take our cue from nature,

[1] Sir J. G. Fitch, *Lectures on Teaching*, p. 376.

we aim at ideals which nature does not reveal. The truth contained in the maxim is, then, that we must adapt our means to the laws of the child's physical and mental development. But even as thus stated the maxim must be interpreted and applied with care. The faculty-psychology has encouraged the notion that in the earlier years the child should be exercised in little else than sense-training, that at the next stage, since memory is at its best—a very questionable statement—he should be burdened with lists of facts and names and dates to be acquired by rote, and that last of all he should be given the opportunity of cultivating his reasoning powers. If this is our interpretation of the maxim "follow nature," far more harm than good must come of applying it.

Psychological and logical order.

Another maxim of method is that in teaching we should prefer the psychological to the logical order. By this is meant that in teaching a given subject we should adopt the order dictated by the laws of mental evolution, rather than that of a systematic exposition of the subject from first principles. This is of course true, but the maxim in question seems a somewhat awkward way of stating the case. The latter method is as psychological as the former, if the learner happens to be prepared to grasp the first principles; and the former method is as logical as the latter, though it happens not to be deductive and synthetic.

Whole to parts.

One aspect of the general method of instruction is sometimes described by saying that we should proceed from the whole to its parts. This is, of course, a short way of saying that we should begin with the complex unanalysed whole known to the child, and proceed to make clearer first the parts and lastly the whole. There is, however, a good deal of danger in applying such a popularly-worded maxim as this. For example, one writer infers from it that in teaching geography to young children we should begin with the earth as a globe, that being the whole whose parts are to be made clearer. But the maxim, correctly interpreted, has reference to the "whole" known to the child, which in this case is the physical surroundings of his home and school. On the same principle we should, in giving an object lesson on tea or tobacco, begin with the product as known to the

child, *i.e.*, as it comes from the shop, and work backwards to the plant itself; whereas in giving a lesson on a geranium we should begin with the whole plant.

Particular to general.

That we should in teaching proceed from the concrete to the abstract is sometimes expressed otherwise by saying that we should proceed from particular facts to general truths, the difference being that the latter maxim draws distinctive attention to the logical character of our procedure, to the fact, namely, that we have here a process of induction. The parallel caution must be given that the pupil should pass on to the general truth as soon as he is able to disengage it, and that the general truth should then be applied to the elucidation of further particular facts; in other words, that the inductive treatment should lead to, and be followed by, the deductive. It may be remarked, however, that little appears to be gained by these ways of putting the matter. We do not always proceed from particular facts to general laws, but sometimes from less general to more general laws; for example, we learn from the observation of particular facts that hot water breaks glass vessels, but this and other less general (or empirical) laws are afterwards brought under a more general law of physics. Again, we must remember that a particular fact becomes so for the pupil only when he views it in the light of a general law. What he starts with is not so much particular as indefinite, unresolved, and complex.

Indefinite to definite.

The last remark suggests the further maxim that methodical procedure in teaching implies an advance from the indefinite to the definite. First the vague, unanalysed unity, then the differentiation of parts and aspects, then the integration of parts into a connected whole, and so, lastly, a more clearly defined unity—this in general terms is the law that runs through the process of mental development. The child's first notion of a flower is that of a vague complex whole in which petals, anthers, and stamens are as yet undistinguished; his first notion of number is that of vague many-ness or plurality; his first geographical notions consist of a vague knowledge of his immediate environment, and when later he is introduced to the geography of a particular region, he starts, or should start, with a vague idea of

its general appearance and structure; and his first geometrical notions are vague ideas of form. The attempt to put exact ideas into the immature mind can only result, therefore, in the communication of verbal statements. We must be content to begin with the indefinite knowledge which the child brings to the task, and to work gradually for clearness and precision.

Empirical to rational.

In dealing with the maxim that bids us proceed from the particular to the general, we saw that it must often mean passing from less general to more general knowledge, and this frequently means passing from empirical to rational knowledge. Empirical knowledge is that which rests only on the observed facts of experience, but of which we can give no reasoned account. A boy may know empirically that exposed water-pipes burst after a hard frost, that a falling barometer portends rain, that the winters of Moscow are severer than those of London, and that a spectator at a cricket match sees the ball struck before he hears the sound of the impact. Rational knowledge, on the other hand, is that in which such facts as these fall into their places in a more general system of truth, and are thereby scientifically explained. If the boy is to reach this higher plane, it can only be by having the empirical observations marshalled and analysed; and so the maxim is sometimes propounded that in teaching we should proceed from the empirical to the rational.

Individual and racial development.

Not only the individual, however, but also the race, is under the necessity of acquiring a stock of empirical generalisations, gleaned from practical experience, before the organised knowledge we call science becomes possible; and so we are reminded of the maxim, far wider in its scope, that "the education of the child must accord, both in mode and arrangement, with the education of man considered historically". This doctrine is connected with the biological theory of recapitulation, whose general purport is that "the series of forms presented by the individual organism during its development from the original germ to its perfect condition is a short and compressed repetition of the long series of forms presented by the ancestors of this organism, from the earliest periods of the so-called organic creation up to the present time". It would appear,

for example, that the pre-natal and early post-natal life of the child corresponds in its main features with the lower planes of animal life, and that the later stages of the child's development are paralleled by the places in the series of animal forms occupied by the higher animals and by man. The correspondence is easily illustrated in a general way. As the power of speech appears comparatively late in the child's development, so it doubtless appeared in the race just as man emerged from the condition of an animal. The earlier forms of mental activity in the child, in which the life of sense-perception, movement, and instinct predominate, correspond with those seen in the higher animals and in the lowest races of mankind. In the savage's fondness for toys, in his verbal inventions, in his liking for strong contrasts of colour, in his taste for gay personal adornment, in his drawings, in his fanciful transformations of the objects of sense, in his readiness to believe in supernatural agencies, and in the nature and sources of his fears, we find striking resemblances to the young child.[1] And in the moral sphere, the advance from impulsive to deliberative action, the gain in self-control and the passage from external to internal sanctions of conduct, mark the progress alike of the individual and of the race.

The "culture-epoch" theory.

On the ground of this general parallelism some of the followers of Herbart hold that both the selection and the arrangement of the matter of instruction must be determined by the historical stages of human culture as well as by the stages of the child's development, and definitive curricula have been constructed in accordance with the "culture-epoch" principle. Of these, excellent as are the suggestions that some of them embody, it is certainly not too much to say that they are premature, since the theory that they rest upon is after all only a theory, by no means established in its details. Besides, even if the parallel were clear and complete, it would apply to the whole of human life from infancy to maturity, and to the whole of a people's history from its beginnings to recent times, whereas the most serious attempt to give a practical turn to the parallel has

[1] See Sully's *Studies of Childhood*, passim.

indeed included in its purview the whole sweep of history, from its dim twilight of legend down to the growth of the modern state, but on the other hand has confined itself to the period of the pupil's life between the sixth and the fourteenth year.

And even if this halting and doubtful correspondence were amended, we should still be compelled to object that, whereas the problems of instruction are functions of two variables, of the child and of the community of which he is a member here and now, this theory assumes another principle which, even if it be true, takes into account only the individual child, and makes light of the present requirements of the civilisation that surrounds him. Though there may be a close parallel between the mental *powers* of a child and those of his remote ancestors, yet he is a member of a very different society, and the *content* of his mental life is therefore quite different from theirs. "He finds all around him a different way of interpreting the facts of experience, different views of right and wrong, different conceptions of life and duty;"[1] and it is in the light of these that he must be educated. No one will deny that Robinson Crusoe, King Arthur, and Robin Hood are suitable for children of seven and eight; but it would be just as idle to deny the appropriateness of the stories of Florence Nightingale and of Gordon. On the whole, we conclude that the parallel between individual and racial development, though extremely interesting and suggestive, and though serving as an additional reminder that we must not expect too much from the pupil either intellectually or morally, affords no safe indication either of what a child should know and believe, or of what should be his notions of conduct and duty.

The "heuristic" method.

The maxim we have just discussed bears upon the selection as well as upon the arrangement of the material of instruction, and so it has led us into a slight digression from the subject of this chapter. Returning now to the commonly accepted formulas that relate only to the problems of method, let us note the one that recommends us to let children find out things for themselves, or, in the fashionable phrase of the

[1] J. Welton, *Logical Bases of Education*, p. 250.

day, to adopt the "heuristic" method of instruction. In our insistence upon the need of beginning with the analysis of the concrete facts that lie to hand, and of proceeding gradually to more complete and definite knowledge, we have implied that the child should be told nothing that he may fairly be expected to find out for himself, either by observation or by inference; but this important aspect of methodical procedure may well be singled out for special emphasis. That telling is not teaching is indeed an old pedagogic saying, though in our day it is sometimes put forward as if it were an absolutely new gospel. Having admitted, or rather insisted upon, its general soundness, we must proceed, however, to guard ourselves against possible misconceptions.

In the first place, the principle that the pupil should discover things for himself, so far as it is valid, applies to all branches of instruction. It is sometimes stated, or at least suggested, that the principle applies in a peculiar sense to experimental science, in a less degree to mathematical science, and in a still less degree to literary studies. But these distinctions probably rest upon traditional and imperfect methods of teaching the latter subjects rather than upon any profound and inevitable differences arising from the nature of the subjects. Guided in part by his previous training, the pupil may feel for himself the beauty of a poem, or may discover for himself the peculiarities of an author's style, or may collect and arrange in an original fashion the materials for an essay, or may formulate for himself an arithmetical principle or a syntactical rule; and if so, he is being taught by "heuristic" methods just as surely as if he had discovered for himself a fact belonging to biological or physical science. This is no question of the relative values of science and literature in promoting the spirit of inquiry, but between dogmatic instruction and its opposite, whatever the particular subject of instruction may be.

In the next place, let us avoid all wild statements to the effect that the pupil must be told nothing and must find out everything. We may all demur to the contention that if, say on some question of experimental physics, a boy "does not believe the statements of his tutor—probably a clergyman of mature knowledge, recognised ability, and blameless character—his suspicion is irrational,

and manifests a want of the power of appreciating evidence";[1] for the point at issue is, not the boy's attitude towards his tutor, but his attitude towards science, and his suspicion would be simply a healthy consciousness that the evidence offered him is not of the right kind. It is quite a different thing, however, to commit ourselves to the extravagant proposition that the pupil is to be independent of the teacher, or at least that the duty of the latter is done when he has provided materials for investigation. "The best of teachers will tell a class some fact in natural history, when he might have taken them into the fields to observe it for themselves. The fact is wanted then and there; to observe it directly would cost half a day; to omit all mention of it would be to omit a necessary qualification of an important principle which is being worked out. If we are to make our natural science absolutely for ourselves, we must be prepared to spend some centuries upon it."[2]

Yet scarcely less than this seems to be implied by those who enunciate, in season and out of season, the proposition that the child should be placed in the position of an original discoverer. Such a statement is made in reckless disregard of patent facts. The man of science or of letters approaches his problem with that mature knowledge or ripe scholarship which guides him in choosing his facts, and in framing and verifying his hypotheses. On the other hand, the child's "apperception masses" are scanty and ill-organised, and so the teacher's business is, not to leave him to fumble his way as best he can, but to give him just as much help as will enable him to make real and encouraging progress in the paths of simple research. Moreover the schoolboy, unlike the original discoverer, is only too ready to jump at conclusions and to make hasty inferences; and unless he be carefully checked and guided, this tendency will result in a sort of training the very reverse of that which is contemplated by advocates of purely "heuristic" teaching. An exception may of course be made in the case of the boy who shows originality. "But originality is a rare gift, while imitation is almost universally found in children. And the two have a closer relation than is commonly supposed.

[1] Todhunter, *The Conflict of Studies*, p. 17.
[2] L. C. Miall, *Journal of Education*, Jan., 1895.

So far from being antagonistic, we may even go so far as to say that imitation is one of the surest stepping-stones to originality. Putting aside, perhaps, a few cases of rarest genius, we shall find that most men who have made their mark in letters, art, or science, have passed through an imitative phase as a definite stage in their development. We must not carry the heuristic theory to extremes, but must remember how potent is the influence of example, how great is the value of wise demonstration."[1]

We come here upon a distinction which is sometimes drawn between intellectual training and intellectual discipline. A boy is trained when he is led, step by step, through a process of investigation or proof; he is disciplined when he is required to discover for himself the steps of the process. Clearly the second is the more valuable exercise whenever it is possible, but this fact need not blind us to the value of the first. The learner who follows intelligently the course of an argument—say the steps of a geometrical proof—is at any rate gaining insight into the method it exemplifies, and by gradually accustoming himself to the method he may afterwards be able to apply it correctly to new cases. Training and discipline as here defined have so much in common that we have generally used them as convertible terms, but it will now be seen that discipline involves more than training. The actual process of teaching usually involves a good deal of both.

Summary of the maxims.

We must end, as we began, our consideration of these maxims by pointing out the common thought that underlies them. Each of them regards knowledge from the point of view of the growing and developing mind, and exhibits some aspect of the way in which the natural course of mental growth should influence the presentation of new knowledge. At the same time each of them reminds us that the teacher who is master of his subject will have in view a systematic arrangement of the parts of that subject, irrespective of the needs of the learner, beginning with the simplest and most general notions, and building up in deductive fashion a body of complex

[1] Lloyd Morgan, *Official Report of Nature-Study Exhibition*, p. 146.

and detailed truths. Analysis is to be followed by synthesis; the "psychological" order, which adapts the material of instruction to the child's growing mental powers, is to be followed by the "logical" order, which unfolds the parts of the subject in the manner seen in its perfection in the mathematical sciences; the concrete must precede the abstract, but armed with the latter we must re-attack the former; particular facts must precede general truths, but these must then be used so as to throw light upon hitherto unexplained particulars; the complex must be resolved into its simple elements, but out of these the complex must be rebuilt; the method of discovery must be followed by that synthetic treatment towards which all discovery tends.

Remarks on the forego-ing maxims.

The maxims we have considered are popular and, it must be confessed, somewhat loose and unscientific ways of stating some of the chief contributions of psychology and logic to the theory of teaching, and their significance can hardly be fully grasped by one who has not made a serious study of those sciences. Nevertheless they may be made a valuable means of enabling a young teacher to rise above the level of imitation and empiricism, for at least they draw attention definitely to the more general aspects of teaching, and they illustrate clearly the ways in which theory may be expected to help out one's rule-of-thumb practice of the teaching art. To do this service, however, they must be carefully guarded and interpreted. As we have seen, they may somewhat easily be understood in wrong and even in contradictory senses.

Depending partly upon the pupil's natural way of acquiring new knowledge, and partly upon the logical characteristics of the knowledge to be acquired, these maxims embody the principles which ought to pervade our treatment of the problems of method. It may justly be alleged that they do not carry us far towards a solution of the practical difficulties of the teacher. But this is true in a sense of all comprehensive principles whatsoever. The fact is that these general formulas do not pretend to afford definite and detailed guidance. Each of them draws attention to some one general aspect of the learner's attitude towards the thing he learns, and together they serve to indicate the frame of mind in which we

ought to approach the questions of arranging and presenting the subjects we have agreed to teach.

REFERENCES

Most of the maxims referred to in this chapter are stated and expounded by Spencer, in *Education*, chap. ii.; and they are most pertinently criticised by J. Welton, *Logical Bases of Education*, last chapter; and by Quick, *Educational Reformers*, chap. xix. On the parallelism between individual and racial development, and its application to the choice and order of studies, see also Lange, *Apperception* (Eng. trans.), pp. 109-50; Rein, *Outlines of Pedagogics* (trans. Van Liew), pp. 95-98; Felkin, *Introduction to Herbart*, pp. 140-44; and Dewey, *The School and Society*.

CHAPTER IX

THE ORDER OF STUDIES AND SEQUENCE OF LESSONS

"It is necessary to determine with the greatest accuracy which of the constituents of instruction is fit for each age of the child, in order, on the one hand, not to hold him back if he is ready, and on the other, not to load him and confuse him with anything for which he is not quite ready "—PESTALOZZI.

THE two practical problems to which we have to address ourselves in this chapter are, first, at what point each of the various subjects shall be begun (if at all) in the pupil's school career; and, secondly, in what way the topics included in each subject shall be arranged and distributed throughout the years of school life. We shall refrain from offering definite and detailed schemes, drawn up in tabular form, for every type of school; and shall content ourselves with setting forth those general considerations upon which all rightly conceived schemes must ultimately depend. No schoolmaster who understands his function will need, or will indeed readily tolerate, that his detailed syllabuses should be drawn up by another hand. At the same time, no schoolmaster can afford to ignore the application of the broad principles that underlie a good syllabus. Those principles, depending partly upon the nature of the subject and partly upon the nature of the child, were illustrated in the preceding chapter. It is obvious, too, that we are thrown back upon such ascertained facts of the child's development as those discussed in the latter part of Chapter V, and the reader might do worse than revise that chapter before proceeding further.

ENGLISH LANGUAGE.

We will begin with the teaching of the *mother-tongue*. It will again be convenient, as in our discussion of the scope of school studies, to consider in turn each of the five distinguishable elements into which this branch of instruction may be resolved.

The art of speaking English clearly and audibly, highly important though we hold it to be, will not assume an independent position in the curriculum, but will connect itself with other branches of teaching. The child of six or seven may be assumed to have acquired a fair command of spoken English, the quality of which has been determined mainly by the influence of his home. Few cases will arise, however, especially in the primary school, in which trouble taken to secure distinctness and accuracy of speech will be thrown away. All lessons in which the children take an active part should be utilised for this purpose, but the reading lessons, especially during the period from seven to ten, will furnish the best opportunities, at least if reading be taught by an intelligent method. At all subsequent stages, both in the primary and in the secondary school, teachers should resolutely set themselves against slovenly and inarticulate speech, whether in reading and reciting, in answering questions, or in oral translation. When a second language is begun, the scope of this part of instruction will be widened and enriched.

Speaking.

At what point the child should begin to acquire the art of reading is a question upon which opinion and practice differ. We may safely say, however, that the tendency is to begin too soon. Few children are ripe for the use of intelligent methods of learning to read before the age of five or six, and few will be the worse, even when school life ends at fourteen, if reading lessons be entirely postponed until the sixth or seventh year. At any rate, three preliminary conditions should be satisfied. The child should be able to speak fluently; his general intelligence should have so far developed that he will be able to perceive similarities and differences of sound; and he should have had so many interesting stories read to him that he begins to be touched with an enthusiasm for getting stories out of books by his own unaided efforts.

Reading. (1) Early lessons in reading.

The main purpose in the early lessons is, of course, to get the child automatically to associate visible signs with spoken sounds. The old-fashioned method of doing this—the method which found expression in the spelling-books of a former generation—began by teaching the alphabet in the cus-

Alphabetic method.

tomary fashion, and then proceeded to build up combinations of two, three, or more syllables. Little regard was had to the real difficulties presented by our irregular orthography, and the forms presented were often meaningless to the child—the syllables because they had no separate existence, and the words because they were beyond the range of the child's vocabulary. A more fundamental defect of the "alphabetic method" was, however, that it did not materially assist the learner in his chief difficulty; for the repetition of the sounds "dee-oh-gee," at the sight of a certain trio of letters, affords, to say the least, only a dim and indirect clue to the sound of the word "dog". The fact that tens of thousands have learned to read by this method shows of course that the indirect clue eventually becomes sufficient, but the process is often a long and tedious one. "Phonic" methods are designed to remove this error of principle, by teaching the sounds of the letters instead of their names, reasonably ignoring the theoretical objection that some of the consonants are voiceless. The practical difficulty remains that English spelling is extremely irregular, but this is got over by confining attention at first to words of regular spelling, and by the use of distinguishing marks or colours to indicate different sound-values of the same letters. So greatly, however, have some teachers been impressed with the difficulties of irregular spelling, that they prefer the "look-and-say" plan, in which the child begins by learning to recognise simple words as wholes, without reference in the first instance to the letters or sounds of which they are composed. The great defect of this plan, if it were adopted in its entirety, would be that every one of the hundreds of words the child must learn would be treated as an independent object; the advantages of noting similarities and differences would be in great measure left to chance, and the child would not quickly acquire the power of solving difficulties on his own account. The "syllabic" method is that variety of the "look-and-say" in which the child is first taught to recognise syllables, and afterwards to combine these into words of two or more syllables. The objection to this plan is that such meaningless vocables as -ot, -et, -ut, have to be learnt at the

Phonic methods.

"Look-and-say" method.

outset. As worked out by its thorough-going advocates, it is doubtless an admirably systematic arrangement of the *subject*, but it becomes a dull business for the *child*. The secret of this lies in the fact that it breaks the canons of method discussed in the last chapter, since it prefers the synthetic to the analytic treatment, the "logical" to the "psychological" order.

A method suggested.

Without entering upon details, we may now present a brief outline of what would seem to be a sound method. First, let a few words of regular spelling, preferably the names of common objects, be printed on the blackboard, in connection with drawings or pictures of the objects, and let these be written also by the children, and so fixed in their memories. Let this process be extended to a few dozens of such words, and let the children become so familiar with these as to be able to recognise them readily when presented at random. A good exercise at this stage will be to get the children to pick out all the words they know from a suitable primer or reading-sheet. Sufficient material will thus have been accumulated for phonic analysis, for which the time will now be ripe. The force of the letter "m" for example, will be gleaned from an inspection of such words as "mat" and "man," and the children may be encouraged to suggest other words beginning with that letter. Gradually the regular sound-values of the consonants, the double consonants, and the short vowels may thus be acquired. Word-building exercises will be freely employed, and every reading lesson will be also a writing lesson. It may be doubted whether a regular system need be carried much further than this; most of the plans in vogue seem to suffer from over-elaboration. Reading-sheets and primers properly illustrated and reasonably well graduated, may now be employed, and the difficulties and irregularities may be attacked as they occur.

So exclusively do the mechanical difficulties of reading occupy the child's attention at this stage that he tends almost inevitably to drop into a monotone, notwithstanding the fact that in ordinary conversation he is by no means a stranger to the arts and graces of effective delivery. Hence, when he begins to read fluently, say in his ninth or tenth year, it will be necessary to insist upon

due regard to emphasis, pause, and modulation of the voice. To this end we should choose the matter of the reading lessons so that it shall be interesting and well within the child's comprehension, and we should then encourage him to exercise his imagination when reading.

(2) Later instruction in reading.

After the pupil has mastered the mechanical side of the art of reading, and is able to get the thoughts of a book without assistance, he should still have frequent practice in reading aloud, but the exercise will now be taken in connection with other studies. In particular, the reading exercise in the primary school will tend to become also a lesson in literature or in history; and in the secondary school it should be borne in mind that good reading aloud is an indispensable condition of the effective study of an English classic.

Writing. To be taught *pari passu* with reading.

The usual plan has been to introduce the child to writing after he has made some progress with reading; Locke went so far as to recommend that writing should be postponed until the child can read well. In our own day, the best teachers agree that these related arts of expression should be taught in close connection, either the script or the printed characters being used at first, and the omitted ones introduced later. Each exercise then reinforces the other, and the element of bodily activity, so prominent in writing, lends an added interest to the concurrent instruction in reading. The passage from the printed to the script character, or *vice versâ*, is not found to present any serious difficulty.

Analytic and synthetic methods.

As in the teaching of reading, so in that of writing, we are met by two contrasted methods of procedure—the synthetic and the analytic. The former was embodied in the old-fashioned copy-books, which began with rows of exercises in the making of strokes and pot-hooks, and proceeded afterwards to combine these elements into letters, and letters into words. The analytic plan begins with whole words. The former aims at a somewhat rigid accuracy from the first; the latter requires us to be content at first with comparatively unsightly performances, accuracy and neatness being gradually obtained. The former is excessively mechanical, and so is apt to

become wearisome. The latter is capable of being made quite interesting, especially when, as we have recommended, it is connected with reading. It may be conceded, however, that teachers of large classes, where individual attention is necessarily slight, should give the children special practice in the formation of letters. This practice, if it follows the attempts at whole words, will acquire an interest of its own. It should be added that at this stage the blackboard is the best instrument of teaching, since the process has to be imitated as well as the result; and that copy-books, if they are used at all, should be regarded simply as a means of practice.

As soon as the child is able to write well, this exercise, like that of reading, will disappear as an independent "subject," and will connect itself with other branches of instruction. Neatness and legibility should be insisted upon at all periods of school life: in particular, the early practice of rapid note-taking should not be allowed to ruin the pupil's style of handwriting.

Composition. Oral composition.

The character of the earliest language lessons will be determined by the child's ability, acquired in the home, to speak with greater or less accuracy and fluency. This will be the point of departure in the infant school or Kindergarten, where linguistic instruction will take the form of extending the child's vocabulary and cultivating his power of speech. The means employed will be conversational lessons, based upon pictures, natural objects, and passing events; and the oral reproduction of stories, the pupil being helped and corrected by the teacher. As soon as the child is able to write, these efforts at oral composition will be supplemented by exercises in dictation and transcription, which will give practice in punctuation and in the use of capitals. Instruction of this kind will be appropriate to the first year of the primary school course, or to the transition class between the Kindergarten and the secondary school.

Written exercises.

From the ninth to the thirteenth or fourteenth year, oral composition will increasingly give place to written work. For this purpose abundant material will be furnished by the pupil's personal experiences, which may sometimes be set down in the form of a letter, and by the collateral instruction in

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literature, history, geography, and nature-lore. During this period more formal exercises should also be given on misused words and phrases, and on the construction of sentences and of paragraphs. From the fifteenth year onwards practice in composition will take a somewhat freer form. The pupil will be shown how best to choose, to sift, and to arrange his materials, and to work them out into the connected form of an essay. Not until a year or two has been spent at this kind of work will he be prepared for that systematic view of the principles of composition known as the study of rhetoric.

Grammar. When should it be begun?

In the foregoing remarks we have designedly omitted all reference to systematic or formal grammar, because opinions differ considerably as to the time and manner of introducing this part of linguistic instruction. As an example of this divergence of view, we may contrast the recommendations of the American Committee of Ten (1892) with the course in the mother-tongue laid down for the Prussian higher schools. The former would provide, during the period from the ninth to the twelfth year, for "oral and written exercises in the correct employment of the forms of the so-called 'irregular' verbs, of pronominal forms, and of words and phrases frequently misused," but are of opinion that "the study of formal grammar, with drill in fundamental analysis," should be taken up "not earlier than the thirteenth year of the pupil's age," that "it should not be pursued longer than is necessary to familiarise the pupil with the main principles," and that "probably a single year (not more than three hours a week) will be sufficient". The Prussian scheme, on the other hand, provides for regular instruction in grammar during the first four years of the secondary school course, beginning at nine years of age. From the parts of speech, the simple sentence, and strong and weak inflexions, the pupil proceeds to the compound sentence, and word formation, and finally, at the age of twelve or thirteen, to "a comprehensive survey of the most important grammatical rules". The difference between the two schemes turns partly perhaps upon the fuller inflexional system of German, especially as the teacher in the German classical school is directed to adopt throughout the same

terminology as in Latin. Still, a preliminary study even of English grammar is undoubtedly a great advantage where the pupil is destined to learn at least one other language, and the American scheme seems to overlook this advantage. The best conclusion for the English primary teacher appears to be that, for the sake of pupils who are to proceed to the study of another language, some instruction in the essentials of formal English grammar should be begun not later than the tenth year, but that for the sake of the rest this instruction should be of a practical nature, it should assume inductive forms, it should be brought into close connection with exercises in composition, it should not occupy a definite position in the time-table for the whole year, and, above all, it should not degenerate into a dull routine of parsing and of tabulated grammatical analysis.

ENGLISH LITERATURE. Literature in the pre-reading period.

The small child's first introduction to *literature* is usually, whether we wholly like it or not, through the nursery rhyme and the fairy-tale. From the first he gets his early notions of rhyme and rhythm; the second ushers him into that world of romance and adventure in which, if he be not unfortunate, he will never cease to find occasional refuge from the commonplace side of life. Nor need we be alarmed if the child of four or five appears to live in an atmosphere of romance to a much greater extent than can ever be the case afterwards, for, as was pointed out in an earlier chapter, this is, in a very special sense, the age of imagination and make-believe. In the later years spent in the Kindergarten or infant school, and, in the two or three following years, until the child is able to read fluently, literature will be continued in the form of story-telling. Abundant material is at hand in Greek and Celtic legend. Tales from the *Odyssey*, the myths related in such books as Hawthorne's *Tanglewood Tales*, and stories of King Arthur, will all be laid under contribution. At this stage, too, what is usually called history would more appropriately be called literature; stories will be chosen from Grecian, Roman, and English history, not yet in the continuous form of true history, but each presenting a graphic picture of the doings of one of the world's heroes. Poetry, chiefly in the form of the simple ballad,

and connected as much as possible with the stories, will also be included.

At the next stage, from about the tenth to the twelfth year, the child will so far have acquired the art of reading as to be able to get his literature from the book itself. The regular reading-book, consisting of extracts, and designed to give progressive practice in reading aloud, should now be supplemented by other books of a distinctly literary character. The general aim here is not to set the pupil tasks, but to give him pleasure. The development of an interest in literature as such is now the all-important thing. Hence the unwisdom, not to say the absolute impropriety, of using the compilations known as science "readers," domestic economy "readers," geography "readers," and the like; as a rule these productions possess not the slightest literary distinction, and at best they are attempts to teach through books what from the nature of the case cannot be so taught.[1] We repeat that at this stage the prime function of books is not to yield information, but to yield pleasure. Kingsley's *Heroes*, Lamb's *Tales from Shakespeare*, Defoe's *Robinson Crusoe*, the ballad of *Chevy Chase*, Macaulay's *Lays*, Tennyson's *Enoch Arden*, Browning's *Pied Piper* and *How they Brought the Good News*, may be cited as instances of suitable material. Care should be taken that, whilst real literature is selected, we do not aim so high as to miss the mark entirely.

From the tenth to the twelfth year.

In the next stage, carrying us to the end of the fourteenth year or thereabouts, the same general course will be pursued. The main object will still be that of evoking an interest in some of the best that has been thought and written, strict regard being had to the taste and understanding of an average boy or girl at this age. The ordinary reading-book, consisting of extracts in prose and verse, will now be abandoned,

From twelve to fourteen.

[1] Some thoughtful writers, under the spell of the doctrine of correlation (which at this point is surely misapplied), maintain the crotchet that these books are an advance on the old "readers" of the purely literary sort. Many geography "readers," most science "readers," and all domestic economy "readers," are intolerable. Historical reading-books are on a different footing, since at this stage history must be a quasi-literary subject.

and will be replaced by complete works, or extracts sufficiently long to possess an interest and unity of their own. It will be a great gain if some of the works are selected because of their bearing upon other parts of the curriculum, and especially upon history; but we cannot make this the sole basis of selection without injuriously narrowing the scope of the boy's literary training. A few of Scott's novels, such as *Ivanhoe, Kenilworth*, and *Quentin Durward;* much of his poetry, such as *Marmion* and *The Lady of the Lake;* Longfellow's *Evangeline* and *Hiawatha;* some of Shakespeare's historical plays, which we may with clear literary consciences freely edit for the purpose; Goldsmith's *Deserted Village* and *Traveller*—these are examples of material which, in the hands of a capable teacher, will evoke lasting interest in genuine literature. But much depends upon the teacher's power and enthusiasm. If he can provide the necessary stimulus, the reading done in the school may without difficulty be largely supplemented by that done at home and during holidays.

Literature in the upper forms.

We now enter upon the final stage of literary culture, so far as the school is concerned. In the middle and upper forms of the secondary school we may suppose that a secure foundation has been laid of general interest in literature for its own sake; and the time has now arrived when something may be attempted by way of critical appreciation. The field of choice now becomes embarrassingly wide, and we need only say that the books selected should be representative of successive eras in the history of literature, that again they should, as far as possible, be brought into helpful connection with other studies, and that above all they should be works whose literary qualities the teacher himself will take a real pleasure in unfolding and illustrating. Manuals of literary history will be eschewed, though a succinct view of great periods and notable works will now have its use. Nor will books of extracts, ranging from *Beowulf* and Cædmon to Tennyson and Stevenson, serve any but a purely ancillary function. Nothing can take the place of complete works, a few of which will be studied very carefully, whilst many others will be read, either at home or at school, with less minute care.

When we pass to the consideration of other languages than English, we are confronted by a variety of important questions falling within the scope of the present chapter. At what age should a first, a second, and a third foreign language be begun, if at all? Which of these languages should take precedence, if more than one is to be learnt? And what should be the characteristic features of the course of instruction at each stage of school life? To these questions the answers of the exponents of existing practice are by no means unanimous, and, as we have before remarked, it is a main function of educational theory—which, after all, is only an obstinate effort to think clearly about the problems of educational practice—to judge between such answers.

FOREIGN LANGUAGES. Questions at issue.

Upon one point there appears to be a consensus of the best-informed opinion. When the curriculum is to include more than one foreign language, it is a bad plan to commence teaching two at the same time. At least one year, and preferably two or three, should elapse before the second is begun. In this way we prevent confusion of ideas, and are able to allow the liberal share of time which is so necessary in the earlier stages of learning a new language. It is true that in many of the preparatory schools that fulfil the function of nurseries to the great public schools of England, Latin and French are both begun when the boy enters at eight or nine years of age;[1] but the wiser course is followed in the German higher schools, where the second language is postponed until the third school year. In both, however, as in all schools where the Renaissance tradition still holds sway, Latin is begun when school life begins, at nine years of age or even earlier. But there can be no doubt that one of the most significant and far-reaching reforms in secondary education is the present tendency to abandon this tradition. For special reasons which need not detain us here, reform in the great English public schools is doubtless a distant vision; but elsewhere there is an unmistakable tendency to postpone Latin until a modern language has been studied for at least a year or two. Those who prefer to

Order of taking up languages.

[1] See *Special Reports*, vol. vi., pp. 189, 232.

abide by the old ways would do so, partly because they hold that the parent language should logically take precedence, but chiefly because they are nervous as to the future of classical scholarship. On the other hand, distinguished advocates of reform are proving by actual results that such fears are groundless;[1] and they rightly point out that the logical order is not always the best order for teaching; that in fact a language which can be attacked colloquially, and which is spoken by a neighbouring nation, is far less remote from a small child's interests than Latin can be. They argue, too, with great cogency, that if the first steps in Latin are to be taken intelligently, we must have as a basis such a knowledge of the essentials of English grammar as cannot have been acquired by young children; whereas instruction in a spoken language is better conducted at first without reference to grammar. Finally, the postponement of Latin simplifies the solution of a difficult question of organisation in those secondary schools which receive from the primary schools children of twelve or thirteen, who have hitherto received no instruction whatever in that language; and even when a child enters the secondary school at ten, the fact that the choice of Latin often constitutes a crisis in his school career makes the delay advantageous.

Reasons for postponing Latin.

We conclude, then, that a modern language should come first, and that in most cases that language will be French.[2] The next question is at what age the study of this language should begin. Two conditions ought to be fulfilled. First, the child should be able to speak his own language fluently, and he should have learnt to read and write.[3] Secondly, his range of ideas and sympathies should have so far widened—partly as the result of simple lessons in geography and history—that he may now be expected to take an interest in the manners and customs of a foreign people whose historical and

At what age a foreign language should be begun.

[1] *Cf. Special Reports*, vol. vi., p. 241.

[2] Many, however, would put German first. See, *e.g.*, Cookson's *Essays on Secondary Education*, p. 21.

[3] The case of a child brought up to speak two languages from the first, whether in a bilingual district or in a bilingual home, is not here referred to.

political connections with his own are close. These two conditions being fulfilled, the one relating to the forms of language, and the other providing the material most appropriate for the new linguistic exercises, the time is ripe for beginning the study of the foreign tongue. In more specific terms, we may assume that the second language should be begun as soon as possible after the tenth birthday. The child passing to the secondary from the primary school at twelve or more will of course be nearly always at a disadvantage here, but this is a case calling for special organisation, in a small school by re-classification, and in a large school by means of a parallel form.

The point at which a second foreign language may be introduced cannot be determined by any general rule, save that, for reasons already given, it should be preceded by at least two years' intensive study of the first. Thus, supposing French to have been begun at ten years of age, a second language would be begun not later than the thirteenth year. In a school where some tincture of the classics is regarded as essential, this language would of course be Latin, indeed some teachers would introduce Latin for all alike at this stage, on the ground that, even if it be dropped in a couple of years, at least no harm will have been done. In a first grade school, where the leaving age is eighteen or nineteen, a third language would be begun at about fifteen years of age, and, since the time for legitimate specialisation has then arrived, this language would be Greek or German or Spanish or Italian, according to the pupil's needs.

Introduction of a second language.

In the brief account of current controversies regarding the scope of instruction in modern languages which was given in Chapter VII, we could hardly avoid some reference to the sequence of lessons, but this point now claims further attention. In the present state of opinion and practice, it is impossible to give even a bare outline of a scheme which would in all respects command general assent. One can only point to a plan which has been found to work in practice, and which seems to accord with what we know of the child's mental development. The first stage may be taken to cover the first two years of the

Course of instruction in French.

course; and the most important and characteristic result to be looked for at its close is that the pupil should be able, within certain limits of vocabulary, to comprehend the language when spoken, and readily to answer questions put in it, without mental translation. After preliminary practice in the sounds of the language, the course of instruction will begin with these ends in view. Most teachers prefer to base the exercises upon pictures or other visible objects, but some would make the reading-book the basis of instruction. In either case the pupil will be thoroughly exercised in recognising and reproducing sentences, in answering questions put in the foreign tongue, and in writing passages from dictation. He will also get frequent practice in accidence, especially in the conjugation of regular verbs, and will be led to note important rules of syntax; but this practice will be essentially inductive, and will be connected with the oral instruction. During this first stage, at least, translations from the mother-tongue are avoided, since these interfere with the general aim. The second stage may occupy another two years, from twelve or thirteen to fourteen or fifteen. It should now be possible to dispense entirely with the use of English during the French lesson. Conversational practice of a freer and more extended character, not depending so closely upon the contents of the book; the more systematic study of grammar, the way for which will have been paved by the previous work, and the introduction of translations from English into French will be the chief features of this stage. The work of the final stage will depend upon the number of years it is destined to last, but in any case it should include free written compositions, both in the essay and in the letter form, and the study of as much of French literature as time will allow.

The course in Latin.

The order of instruction in the classical languages is a problem that has a much longer history behind it than the others dealt with in this chapter, and so the business of the modern teacher of classics is to improve upon traditional plans rather than to break new ground. To John Sturm, rector of the gymnasium at Strasburg, during the years 1538 to 1583, belongs the distinction of having embodied the Renaissance ideal of education in a definite working scheme. The end proposed

was a masterly command of language, Latin being the language in which that command was to be acquired; and so thoroughly did he devise the practical means of attaining that end, that what is understood as a classical education has clearly borne his impress ever since. He desired that the pupil should enter school at six or seven years of age, remain there for ten years, and then go to an academy for five years. "Of the ten years, eight are required for gaining purity and perspicuity, two for adding the graces of style. Readiness and skill in adapting words to things are the business of the five academical years. . . . Of the ten forms, each one has its special work. The youngest boys are taught the Latin name of everything they eat, drink, see or handle in play-ground, school or church. As they rise in the school, the quantity of Latin text read is much increased. The practice of composition is incessant. The elder boys write exercises daily. Verses are begun in the fifth; the upper forms transpose odes of Horace and Pindar into other metres, and produce poems of their own. In prose, the fifth form re-translate from German into Latin, and compare with the original. The upper forms turn Greek orators into Latin, and Latin orators into Greek. . . . They write themes, descriptions, and letters, and declaim with or without verbal preparation. They also make careful written translations. . . . On Sundays they turn German catechism into Latin. . . . To gain colloquial readiness, all the boys speak Latin, even the obscure little Teutons in the dim regions of the lowest forms. The masters are forbidden to address them in German. The boys are severely chastised if they use their mother-tongue. . . . A first fault may be pardoned, but contumacious use of the mother-tongue is far too grave an offence."[1]

Such was the scheme upon which secondary education was largely modelled during the three succeeding centuries, in England as well as in Germany. The ideal to which the system gives expression has been on the whole discarded, and this change has found

[1] Parker, "On the History of Classical Education," in *Essays on a Liberal Education.* Sturm's scheme is outlined by several English and American writers, *e.g.*, Barnard (*German Educational Reformers*), Painter (*History of Education*), Browning (*Educational Theories*).

expression in a widened curriculum. Even in schools where the Renaissance ideal is still a force to be reckoned with, the problem is profoundly influenced by the fact that Latin is no longer a spoken language, and that the plan of teaching it conversationally in the early stages, though occasionally adopted, hardly affects the issue.

As we have seen, the general effect of these changes has been a tendency to push forward the age at which Latin is begun. We assume that the pupil commences this study at twelve or thirteen, and that the ultimate aim is, not a practical command of the language as an instrument of communication, but rather the comprehension, based on accurate grammatical knowledge, of at least a few of the easier works of Roman literature. Now these two circumstances make all the difference in the method to be employed in the earlier stages of the course. The pupil is now no stranger to systematic grammar, and there is no objection in principle (as there would have been at the age of nine or ten) to taking him through a grammatical course, shorn of everything inessential, and mingled with such exercises as will help to impress the forms and rules. A skilful teacher will make much use of inductive methods. Indeed he may copy the "natural" method so far as to base his teaching entirely upon a specially prepared reading-book, summing up at convenient points the grammatical knowledge acquired.[1] But on the whole the method employed, unlike that appropriate to a modern language, will make straight for a knowledge of the grammatical framework of the language, and the acquirement of a vocabulary that shall be useful for literary purposes. The exercises and reading matter will be constructed with these ends in view. After this preparatory work is accomplished—and it is said that boys of twelve or thirteen can make sufficient headway in a twelvemonth—an easy Latin author will be attacked. Thenceforward, books of progressive difficulty, both as to matter and language, will be read, grammar will be revised and amplified, frequent practice will be given in the translation of unseen passages, and more attention will be paid to points of style.

[1] See E. A. Sonnenschein's paper on "Newer Methods in the Teaching of Latin," in *Special Reports*, vol. viii.

HISTORY. (1) In the primary school. Three plans contrasted.

So far as the primary school is concerned, *history* must mean, mainly, though perhaps not exclusively, a biographical and narrative treatment of the story of the child's native land. The order of instruction that would naturally occur to a historian is that which begins in the lowest class with the earliest times and ends in the highest class with the present time; and so British history is sometimes divided into six (or fewer) chronologically consecutive portions, which can be treated, commonly in connection with the reading lessons, in the several classes of the school. It has been objected to this arrangement that the earlier periods are never treated in any other way than that which befits quite young children, and that recent history, reserved for the highest class, is never touched at all by those children who leave school at the minimum age. And if it be objected in turn that any other order must violate the sequence of events, the answer is that in the earlier stages sequence counts for little, since the pupil is not ready for real history, but only for detached historical pictures treated in a literary spirit. A concentric plan has therefore been proposed, whereby great landmarks of British history, selected from its whole range, are dealt with from the first, but in greater numbers and with greater detail and precision as school life proceeds. This plan clearly avoids some of the difficulties of the first; but some teachers hold that the repetitions it involves tend to detract from the interest of the subject. A third proposal is that the course should be chronologically regressive, beginning with the present day and going backwards. It is contended that as geographical instruction properly begins with what is nearest, so should historical. But this is a superficial application of the principles discussed in the last chapter; for the question is, not what happens to be near the child in time or place, but what lies near his interests. His geographical surroundings certainly do interest him, but the political and social events of his time do not. Picturesquely related, the doings of the heroes of history will appeal to him, whether they lived ten years or a thousand years ago; and so there is no need from the teacher's point of view to adopt an order which a historian would call topsy-turvy.

We conclude, then, that in the first three years of the primary course (from seven to nine or ten) the children should have stories told them connected with the more interesting and important events of our national history, and not confined either to the earlier or to the later periods. These stories should, since children are more concerned about men than about institutions or events, be chiefly biographical; Simon of Montfort, King John, and Nelson will form better subjects for lessons than The First Parliament, Magna Charta, and the French Wars. In the following years a history of Britain, simply but not childishly written and well illustrated, should be used as a reading-book, and the main outlines of the great periods should be taken in chronological order, care being taken that the children shall generally have gained some clear notions of Queen Victoria's reign before they leave school. In the higher primary school, historical instruction might fitly be confined to the social and industrial progress of recent times.

A course suggested.

Up to the age of fourteen or thereabouts the order of historical instruction in the secondary school must of course be similarly determined by the needs of the pupil's growing mind, though its range will be wider. The home or the preparatory school should have laid a foundation of vivid historical narrative, in the shape of picturesque biographies of the greatest men of different periods. At what precise point this first stage should end, and the more formal and systematic treatment of history should begin, is a question upon which the opinions of experienced teachers differ; but we may perhaps safely say that it should not be postponed further than the eleventh year.[1] During this second stage, which will last till the fourteenth or fifteenth year, the instruction must still take the form of graphic story and stirring narrative, the personal element will still be of paramount interest to the pupil, and the teaching must be characterised by

(2) In the secondary school.

[1] This is the point fixed by the curricula of the Prussian Higher Schools. The late Prof. Withers suggested ten (*Teaching and Organisation*, p. 187). The American Committee of Ten placed it at eleven, or at latest twelve (*Report*, p. 170).

life and movement. The text-books used at this stage should be written "poetically much more than philosophically, with much liveliness of style and force of painting, so as to excite an interest in the persons and things spoken of."[1] The third stage carries us forward to the work of the highest forms, when the pupil should be introduced to the more serious kind of study in which judgment and reflection are called for. Text-books will be partly replaced by historical classics, such as Macaulay's *Essays* and Burke's *Speeches*. "The pupil may be taught to notice from time to time the various criteria of a credible narrative, and by the rule of contraries to observe what are the indications of testimony questionable, suspicious, or worthless; . . . to trace back institutions, civil and religious, to their origin; to explore the elements of national character," and generally "to know what to look for in history, how to judge of it, and how to apply it."[1]

So much for the spirit that should pervade the several stages of historical instruction in the secondary school. What now of the matter to be taught? As we have seen, its range should be wide, so that the charge of insularity may not so justly be laid at the door of the English secondary school. The stories for the preparatory stage should be drawn from European as well as from British history. Thereafter, the wide range of the instruction, and the varying aims of schools of different types, will naturally give rise to divergencies in the arrangement of the course. Some will prefer to throw the stress at the intermediate stage upon English history, in which case the general condition of Europe should be kept steadily in view, and to reserve Roman and Grecian history, together with special portions of modern history, for more advanced treatment, and for the closing years of school life.[2] Others would include both ancient and modern history throughout the course, so that each stage may constitute a survey of the whole field from the different points of view indicated above.[3]

The old-fashioned plan of arranging the course in *geography*

[1] Dr. Arnold, *Miscellaneous Works*, pp. 359, 360.
[2] *Cf.* Findlay, *op. cit.*, p. 236 and Appendix II.
[3] *Cf.* H. L. Withers, *op. cit.*, p. 189. *Cf.* also "Curricula of Prussian Higher Schools," in Sadler's *Special Reports*, vol. iii., pp. 290, 291.

was that which began with the most general aspects, *i.e.*, with the elements of astronomical geography, proceeded to the treatment of the greater divisions of the earth's surface, and finally descended to the smaller portions. The cardinal vice of such a plan is of course its assumption that the child is a small edition of the man, and that, therefore, his needs are met if we take this subject as it appears to the geographer, and divide it as it stands into a number of parts corresponding to the successive periods over which the study is to be spread. That "geography, like charity, should begin at home," is now, however, a commonplace of educational theory and practice. It is true that this formula has shared the fate of most others of its kind in being applied without discrimination. To say that we should proceed from school premises to town, town to district, district to county, thence to country and continent, and finally to the globe, is merely to travesty a sound principle. When, by a course of *Heimatkunde,* those elementary notions have been acquired without which effective instruction is impossible, and when sense-data have been supplied which may enable the learner to form mental pictures of distant scenes, the time has come for giving the child an approximate idea of the world as a whole, and of his own place therein. In other words, the time has then come when the "logical" order becomes as "psychological" as any other, and is therefore to be preferred.

GEOGRAPHY.

The first stage of geographical instruction, which may be taken in the child's seventh or eighth year, will include notions of distance and direction, with special reference to the school premises, and will pass thence to a consideration of the cardinal points, the course of the sun in the heavens, and the mariner's compass. The plan of the school and playgrounds will then gradually be constructed with the children's active co-operation, and so they will gain their first idea of a map as representing relative positions and distances. Then will follow the plan of the town or city, or perhaps of surrounding roads and farms, first in broad outline and afterwards in fuller detail. In the next year, geographical terms might be explained, as far as possible with reference to the locality, and with the help of a relief map, which

Its first stage.

should be made in the classroom. Special attention should be paid at this stage to the hills and valleys, rivers and drainage. The next step will be to work these details into a physical map, drawn on the blackboard or on stout paper; and so the pupil will gain the further notion of a map as representing heights as well as distances. A rapid comparison may now be made of the map of the county with that of England, that of England with that of Europe, and that of Europe with the globe, whose great divisions can now be pointed out. This brings us, say, to the end of another year's work, so that in the third year the more detailed geography of England and Wales may safely be attempted.

Second stage.

During the next few years, from ten or eleven to thirteen or fourteen, the order is dictated by considerations of interest rather than of inherent difficulty. In this country it is natural that we should go on to a comprehensive survey of the chief British colonies, and then of those countries of Europe with which we have close commercial or other relations. The more important political divisions of the remaining continents, and especially the United States, might then be studied, care being taken, however, that the general features of each continent are understood before the smaller divisions are dealt with. Concurrently with the course in general geography, the elementary truths of mathematical and physical geography must receive some attention; for example, the causes of day and night and of the cycle of the seasons can now be made intelligible, and material will have been gathered for a special study of climate and its influences.

Final stage.

We are thus brought to the end of the primary school course, between which and the preparatory and lower forms of secondary schools there is no reason for divergence with regard to this subject. In the higher forms geography will reappear under one or more of various special aspects—historical, commercial, physical and mathematical—according to the general course pursued. Except in the case of boys preparing for business life, it will usually lose its substantive position in the curriculum, and will be revised in connection with other studies.

Nature-study, understood in the sense indicated in Chapter VII., will be commenced in the Kindergarten or infant school, and

will be continued in the primary or preparatory school. In the earlier part of the course, say until the pupil is about nine years of age, the selection of matter will be dictated entirely by the idea of securing the child's keen interest in the works and ways of nature. Elementary studies of familiar plants and animals, illustrated by examples actually before the pupils, and conducted whenever possible amid the creature's natural surroundings, will form the staple of the instruction; and to these will be added simple observations of earth and sky, wind and weather, there being no necessity at this stage to treat physical geography as a separate study. There need be no attempt at being systematic, and at strictly following a prearranged course. In choosing subjects for lessons, the teacher will be guided by the accessibility of material, by the changes of the seasons, and by her own knowledge and tastes; the main object being to beget in the children an intelligent interest in natural phenomena. The lessons will be freely correlated with language, literature, and drawing; indeed the nature-study will frequently form the basis of the instruction in these branches.

NATURE-STUDY AND SCIENCE. First stage.

The next stage takes us on to the eleventh or twelfth year. The instruction here will be in the main similar to that which preceded it, but it will now become more connected and systematic, and will include, on the biological side, easy comparisons and classifications. It will probably be wise still to select most of the material from plant and animal life, since these are of paramount interest to children, and since studies which involve simple observation are more appropriate at this period than those which involve accurate measurements. Well illustrated lessons on common minerals, systematic records of the weather, and some observation of the heavenly bodies, will also form excellent material.[1]

Second stage.

During the last two years of the primary school course, and at the corresponding period of the secondary school course, the pupil may rightly be expected to become interested in a systematic introduction to experimental science, including physics and chemistry, with which may well be connected

Third stage.

[1] See Scott's *Nature-Study and the Child*, chaps. xiv. and xv., for detailed suggestions regarding courses for primary schools.

experimental geometry and mensuration. The course may, and should, be framed so as to be sufficiently self-contained for those who do not pursue science any further, and so as to form at the same time a suitable foundation for those who do. Books will play a very slight part in the teaching; demonstrative experiments will be more important; but (in higher elementary and secondary schools at least, though for ordinary elementary schools this must remain to a great extent a counsel of perfection) the life and soul of the study should be the actual performance of the experiments by the pupils themselves.[1] Notwithstanding the more fundamental character of chemistry and physics as an introduction to a scientific course, and their use in practical arts, some teachers, influenced by the general character and aims of the school, by their own preferences, and perhaps by the difficulty of providing apparatus and laboratory, prefer to occupy their pupils (and especially girls) during this period with a continuation of the earlier work in botany and zoology. In any case, it would be well to include some instruction in human physiology and in the simpler conditions of healthy life in the home.

Final stage.

From the age of fourteen or fifteen until the termination of the secondary school period the pupil who continues to study science will, on the basis of the foregoing work, undertake a more definite and systematic course in preparation for the university or the technical college. The great aim will now be to give a more thorough training in scientific method, and to transform the uncertain and spasmodic curiosity of childhood into an abiding enthusiasm for scientific pursuits.

ARITHMETIC. (1) Early lessons. Three methods examined. "Figuring" method.

The best way of giving small children their first notions of *number* is one of the most interesting of pedagogic problems. Three methods present themselves for examination, and we may descriptively call them the "figuring," the "fixed unit," and the "measuring" methods. The first of these identifies arithmetic with "doing sums," and embodies the old plan of committing words to memory. But learning the *words* one, two, three, etc., is not really learning to count; and

[1] The syllabus adopted by the Incorporated Association of Head Masters may be taken as a type of such a course.

the application of rote-learned tables to formal sums does not contribute to a real knowledge of number. We may, without further ado, brush aside this plan as one of the many means by which stupidity has been artificially induced in children.

"Fixed unit" method.

Thoughtful teachers have long understood this, and have sought methods which do not have the effect of reducing an otherwise bright child to despair as soon as he hears the word "sums". The most popular of these, elaborated by a German teacher named Grube, is that which we have called the "fixed unit" method. The first stage of this method begins by attempting to drive home the notion of unity; it then proceeds to 2, 3, and so on up to 10, dealing with each number so as to exercise the child in all the four elementary operations. Each number is "compared" with all its predecessors, large dots being employed by way of illustration, and afterwards other objects. The number 6, for example, is "compared" with 1, 2, 3, 4 and 5, in all possible ways, so that there emerges an elaborate scheme of relations. No new number is dealt with until "all is done that can be done" with the previous number. The second stage proceeds from 10 to 100, each number being "compared" in succession with the numbers from 1 to 10.

Its merits.

In some respects this plan is clearly an advance upon the verbal and haphazard teaching that we have described above. It employs objects that appeal to the senses; it takes into account the connection between the fundamental operations; it puts notions before symbols; it avoids the mistake of working too soon with high numbers, and it is surely a model of order and of painstaking thoroughness. Nevertheless it is certainly not the final word of pedagogy regarding early lessons in number.

Its shortcomings.

For, in the first place, its principle of arrangement may well be challenged. To proceed slowly from 1 to 2, 2 to 3, and so on, arriving at 10 in the course of a twelvemonth, is to ignore the patent fact that the child's counting activity far outstrips the use that is thus made of it. The advantages of the decimal system of notation and numeration are wantonly sacrificed; and it is falsely assumed that "doing all that can be done" with the number 13 is a simpler business than doing

something with the number 30. Furthermore, the method attempts too soon to bring to full consciousness the ideas of division and ratio; the notion of nine things is not more difficult than the notion of eight, but the notion of division is more difficult than that of addition. In the second place, the method errs in beginning with the fixed unit, and regarding each successive number as a mere aggregate of such units. The truer idea of number is that of a ratio obtained by applying to a vague, unmeasured whole a certain unit of measurement; and so, after the child has learnt to count, each number should be introduced as an indefinite whole (illustrated by such devices as the points on dominoes), to be made definite by rhythmical processes of analysis and synthesis, "parting and wholing". First the vague, unmeasured whole, then the unit of measurement, and lastly the definite measured whole, and the addition and subtraction of its parts—this is the true order of presentation. A gifted writer, in a diary of his little daughter's progress, says: "I have been some weeks at work with the five cubes I use to teach numbers, and by varying the play with them D.'s attention is kept up, but the only thing she can do with certainty is to count from one to five. To-day I got her to make two columns, one of three cubes and one of two, but she had no notion how many cubes there were altogether. When I said Count! she counted one, two, three, and then one, two, but $3+2$ was quite beyond her."[1] The failure was due, not to the child's lack of intelligence, but to the teacher's lack of skill. Why should the poor child be expected to get the notion five out of the separate notions three and two? If the five things had first been presented and counted, and then parted into 3 and 2, the relation $3+2=5$ would probably have appeared not only clear but inevitable.

This example points to a further fault of the method we are considering, namely, its assumption that numerical relations are a direct property of objects, like form and colour, and that the objects need only to be looked at in order that numerical relations may at once emerge; whereas it is we who put number into

[1] *Quick's Life and Remains*, by Storr, p. 326.

objects for our own practical purposes. The five cubes were there, sure enough; but the idea of five cubes was not therefore in the child's mind. That must come, not by gaping at the objects, but by constructively using them. Concrete objects before the senses do not necessarily mean concrete knowledge in the mind.

Critics of Grube's method are, however, apt to introduce too early the idea of number as the ratio of one quantity to another quantity taken as unit. If arithmetic is to be taught intelligently, this idea must be brought out as early as possible. But we must remember that a child's first notion of number is gained by counting. It has been suggested that the root of this accomplishment lies in the bare idea of succession, as experienced in breathing, in walking, in the ticking and striking of the clock, and so on. Next comes aimless unintelligent counting, often accompanied by movements, and often denoted by any words indicating order, *e.g.*, by the numerals irregularly placed. Next, this series idea is applied to objects; and here a difficulty arises, for the child usually confuses ordinal and cardinal numbers, calling the third and fourth objects "three" and "four". Now it is just here that arithmetical teaching should begin. The child should first be taught to count intelligently, and he should then be led to see that counting and measuring imply each other. The measuring method gives the child a just conception of number from the outset, whilst the "fixed unit" method yields notions that are cramped and inadequate; the former, by the great variety of simple practical problems in weighing and measuring to which its intelligent application leads, begets a direct interest in number for its own sake, whilst the latter compels the teacher to adopt artificial means of preventing the instruction from becoming a dull and lifeless routine.

The teacher will confine herself for some time to the numbers from 1 to 10; and if at the end of the child's seventh year he has acquired, on the principles above indicated, a working knowledge of the simpler relations of these numbers, good progress has been made. It must be remembered, however, that counting will be carried beyond this point, and that three tens or three hundreds are not more difficult notions than three cubes or three

marbles. The plea that the child is unable to realise hundreds of objects means only that he is unable to picture them, and this is as true of adults as of children.

The next step will include a more formal study of the numbers up to a hundred. Here the elementary principles of our decimal notation and the notion of the local value of figures may be taught. The rule of subtraction will present the chief difficulty, but the use of simply devised apparatus, and the avoidance of the unmeaning terms "borrow" and "carry," will help to clear the way. The multiplication tables meantime will have been begun, but they will in all cases be constructed before being committed to memory. In the period from the eighth to the eleventh year, the simple and compound rules will be taken. Careful graduation will here be necessary; for example, in teaching long division such divisors as 71 and 91 are more easily dealt with than 17 and 19. In the twelfth year, fractions will be taught formally, though elementary notions of fractions will have been insinuated much earlier; and lastly, decimals and proportion, together with as much of commercial arithmetic as seems necessary. Into the details of this later instruction we need not here enter, and if the earlier instruction seems to have been discussed at disproportionate length, it is only because this is the stage which calls for the greatest care and skill.

(2) Later (and more formal) lessons.

In determining the point at which *algebra* is best begun, we must make a distinction similar to that which we have already made between introductory and formal or systematic science, and similar also to that which remains to be made between the preliminary and the systematic course in geometry. There is no reason whatever why the pupil, when he begins the study of formal algebra, should be a stranger to the language of symbols. For some occult reason, teachers and examiners have, until quite recently, set their faces against the use of algebraic symbols in the arithmetical course—surely a flagrant violation of logical continuity and even of common sense. 'It is desirable, during the study of arithmetic, to familiarise the pupil with the

ALGEBRA. At what period it should be begun. (*a*) Preliminary notions.

use of literal expressions and of algebraic language in general. The teacher may advantageously introduce the simple equation in the study of proportion, of the more difficult problems in analysis and of percentage and its applications. The designation of positive integral powers by exponents may also be taught. Avoiding the introduction of negative numbers, the pupil should be drilled in easy problems like the following: If one stone weighs *p* pounds and another weighs *q* pounds, what is the weight of both together? If a square table is *a* feet long, what is its area? If *a* yards of cloth cost *b* dollars, what will *c* yards cost? Such exercises should grow out of similar ones involving numerical data ".[1] In ways like these the pupil in the primary school may, at any rate during the last two years, extend his conceptions of number, and prepare the way for a possible study of formal algebra.

(*b*) The formal course.

That study may be entered upon in the thirteenth or fourteenth year. The pupil's success will depend in the first instance upon the intelligence with which he has learned arithmetic; it cannot be too strongly insisted upon that the best introduction to algebra is a thorough grounding in the *principles* of arithmetic as distinguished from mere readiness in computation. The beginnings of formal algebra are apt to be made unnecessarily arid and meaningless to the pupil; but the skilful teacher will avoid this by the early introduction of simple equations and problems. In doing so he will find it necessary to depart from the order of most of the text-books, which should of course be regarded as servants, not as masters.

GEOMETRY. (*a*) Early notions.

As regards the period of its introduction, *geometry* is on a very different footing from algebra. Relations of space, like those of number, are so fundamental in their character that simple geometrical notions are rightly introduced into the Kindergarten course. Unfortunately, however, Froebel's educational philosophy suffered from an excessive symbolism, the effects of which are plainly manifest in the strong geometrical bias observable in his system of gifts and occupations. The more progressive Froebelians are beginning to see that this

[1] *Report of American Committee of Ten*, p. 111.

mental twist of the great reformer has influenced to far too great a degree the essentially excellent work that has been done in the training of young children. The customary exercises in the folding and cutting of paper and the laying of tablets, based as they are on geometrical forms, are premature, because for the present they lead nowhere. The child of seven or eight is too young to enter upon the course of concrete geometry to which such exercises should naturally lead. Up to about the eleventh year a knowledge of geometrical forms should be communicated incidentally, in connection with drawing and nature-study, but no separate provision should be made for it in the curriculum.

(*b*) Concrete geometry.

Somewhere about the eleventh year, when ruler and compasses may appropriately be placed in the child's hands, a course of concrete or practical geometry may well be begun, which should serve the double purpose of preparing some pupils for later mathematical work and of providing suitable instruction for the pupil whose education is confined to the primary course. The chief facts of plane and solid geometry will be taught, not as a rigidly demonstrative system of truth, but by measurement and experiment: it is here rather than in the Kindergarten that paper-cutting, paper-folding, and cardboard-modelling have their true place. The instruction should be connected with arithmetic, drawing, and elementary science. In his thirteenth or fourteenth year—and in most cases it is a great mistake to begin earlier—the pupil may enter upon the study of theoretical geometry: whether or not this shall be based upon Euclid is a question that we have already touched upon. In any case it is not desirable that practical and numerical methods should even then be abandoned.

(*c*) Demonstrative geometry.

Music.

There exists a fairly close parallel between the teaching of reading and that of *music*. Just as the literary training of the small child should begin, by way of suitable stories, before any attempt is made to teach him to read, so his musical training, by way of suitable songs, should be in advance of any instruction in musical notation. "All investigations of the phenomena of music and song among children," says a writer

on child-study, "seem to indicate that folk-songs and the cultivation of music by ear come first, not the artificialities and notations of the school. Song should be free and fitted to the child mind ".[1] In Germany and other Continental countries school music appears to suffer through neglect of systematic instruction in sight-singing,[2] but in our own country the spread of the sol-fa system has perhaps resulted in premature attention to this. It is more than doubtful whether any attempt should be made to initiate average children under eight years of age into the mysteries connected with the sol-fa syllables; it is enough at this stage that they should learn simple and pretty songs, and that their sense of tune and rhythm should be cultivated in connection therewith. From about the eighth or ninth year onwards, elementary instruction in time and tune may be given, but it will be some years before the progress made in the mastery of musical notation will be enough to enable the pupil to sing at sight a song of ordinary difficulty, and it would be a mistake meanwhile to choose the songs so that they include only the elements of notation that have been mastered. At ten or eleven years of age, two-part songs can be introduced, but it is very doubtful whether they ought to be much employed, since they have the effect of strengthening an undesirable tendency in some children to the use of the "chest voice". At least, good unison songs, and especially those of the national and folk type, should be learnt. When the sol-fa notation has been employed, its principles should be applied to the explanation of the elements of the staff notation—a point which has hitherto received scant attention in primary schools. In secondary schools, there is an interval during which boys' voices are less available for singing purposes, but in the upper forms of the best schools—thanks largely to the labours of John Farmer and others—the practice of good vocal music is continued to excellent purpose.

Drawing, like language, is part of the child's instinctive tendency to self-expression, and so the slightest observation of the ways of young children makes it sufficiently clear why drawing is by

[1] A. F. Chamberlain, *The Child*, p. 183.
[2] See J. S. Curwen's *School Music Abroad.*

common consent regarded as one of the leading occupations of a well-conducted infant or preparatory school. But when we examine the means by which it is sought to utilise this tendency for the promotion of the child's education, we find serious differences in current practice. We are again met, in fact, by the old contradiction, already exemplified in the teaching of reading and writing, between analytic and synthetic methods, between the point of view of the child and that of the adult. Some would set the young child drawing perpendicular, horizontal, and diagonal lines on slates or paper ruled in squares, and then proceed to figures or patterns formed by combinations of these. The hand, it is said, is thus trained in nicety and precision, and the eye in discerning degrees of variation from the perpendicular or horizontal, and in judging distances. This course would be followed, from the seventh to the ninth year, by a similar course in the drawing (with or without ruler) of lines, angles, parallels and simple right-lined figures. It will be seen that this method is devised from the adult point of view; *we* desire that the child should as quickly as possible draw firm and steady lines, as a preparation for more advanced work. The drawing-master's lines and angles play the same part as the writing-master's strokes and pothooks. In the hands of an exceptionally capable teacher, quick to win the sympathy of children, and apt at introducing variety into technical exercises, lessons of this kind are of course redeemed to some extent from their native dulness; but in most cases such teaching must become lifeless and wearisome, because, as we shall see in the next paragraph, it ignores the supreme condition of interest. The attempt has been made to mend matters by basing early lessons upon the ellipse rather than upon the right line and the circular arc, since the child's first scribblings are seen to take an elliptical form; but the synthetic principle here remains the same.

DRAWING. Early lessons. (*a*) The synthetic plan.

Broadly contrasted with the method which, beginning with drill in the elements of form, works at once for rigid accuracy, is that which begins with whole objects familiar to the child, is content at first with performances that are often unsightly and amusing, and works gradually

(*b*) The analytic plan.

for accuracy. This method evidently takes into full account the child's own point of view. The drawings of children from three to eight or nine years of age, crude as they usually are, exhibit a curious process of development. The first use of paper and pencil results in aimless scribbling; next comes a stage in which the child's make-believe propensity enables him to see in his oddest combinations of dots and lines faithful representations of objects; later, he gives more attention to the relative positions and sizes of parts, and treats common objects, including human and animal forms, in a less unsophisticated fashion.[1] Eventually, perhaps in most cases at eight or nine years of age, he begins to feel the inadequacy of his attempts; and this, to use a cant phrase, is the psychological moment for commencing instruction in the art of correct representation, the necessity of such instruction being now felt by the child himself. By waiting upon the child's instinctive tendencies we secure his whole-hearted interest. Those tendencies comprise what Herbert Spencer means by "nature," in his vigorous advocacy of plans of teaching which recognise "the spontaneous attempts made by children to represent the men, houses, trees, and animals around them, on a slate if they can get nothing better, or with lead pencil on paper if they can beg them," or, greatest delight of all, with paints and brush.[2]

(c) A compromise.

We are thus confronted with two contradictory plans. Roughly speaking, what we have called the synthetic method is favoured by those who are anxious to train "faculties," but who do not know children, and have not the feeling of the artist; whilst the second plan is preferred by those who know children, but do not care for what they regard as a precocious precision of hand and eye. It is right to add, however, that teachers in primary schools sometimes feel driven, against their better judgment, to adopt a species of drill in the grammar of form, partly through a desire to secure palpable and measurable results, and partly on account of the greater ease with which such a system

[1] See Sully's extremely interesting chapter on "The Young Draughtsman" in *Studies of Childhood;* also Kirkpatrick's *Fundamentals of Child-Study*, pp. 240-42.

[2] *Education*, chap. ii.

is carried out with large numbers of children. Apart from this difficulty, which is not in principle relevant to the present issue, we may safely say that up to the eighth or ninth year drawing should be in the main the free expression, helped out by hint and encouragement, of the child's ideas of objects and events. The stories which he hears, the lessons on natural objects, and, later, the simple lessons in history and literature, will afford abundant scope for such exercises. The treatment should be free and bold, and to this end chalk and blackboard are preferable at first to paper and pencil. At the same time, such advantages as are thought to accrue from the Froebelian exercises on chequered slates, and from the subsequent drill in lines and angles drawn with the free hand and with the ruler, need not be entirely sacrificed. As a subsidiary expedient, a moderate use of these exacter exercises may have advantages; but to base the instruction in drawing entirely upon them is to nip in the bud the child's natural tendency to use drawing as a means of expression, and is therefore to court the worst kind of failure.

Later instruction in drawing.

With regard to the later instruction in drawing, in the upper classes of the primary school and throughout the secondary school, it must be confessed that existing schemes are not as a rule distinguished by unity of conception or clearness of aim. They usually include, in the first place, a good deal of freehand drawing of ornamental patterns, of objects represented in the flat, and of casts of ornament. The drawing of objects from the flat seems to be a good deal overdone, there being no evident reason why the forms of cups and candlesticks, leaves and flowers, should be practised otherwise than from the actual objects. Secondly, we have drawing from models of regular form, from common objects actually before the pupil, from casts, and so forth, leading afterwards to representations of light and shade. Thirdly, we have the freehand exercises known as brushwork, in which a flexible is substituted for a firm point. Fourthly, we have geometrical drawing, which, in combination with the freehand exercises, is made the basis of lessons in design. Lastly, there is sometimes added water-colour painting from the flat and from the actual object.

From this somewhat loose aggregate of material, it should no doubt be possible to construct a well-knit scheme of exercises. Two suggestions at least may be offered. The first is that the free and inventive side of this work should be cultivated, and the simply imitative less relied upon. The second is that, considering the aims of this branch of instruction as set forth in Chapter VII., the syllabus should not be devised so exclusively from the art teacher's special point of view. If it is to be a real force in a general education, whether primary or secondary, drawing must undoubtedly be brought into close connection with the teaching of other subjects, such as history, literature, and science, as well as with the more general interests of the pupil.

MANUAL INSTRUCTION. (*a*) In the Kindergarten.

The *manual employments* in vogue in the orthodox Kindergarten are those comprised in Froebel's scheme of gifts and occupations. Highly suggestive as these undoubtedly are, they must not be regarded (as the Aristotelian logic and the Euclidean geometry have been regarded in higher instruction) as an inspired gospel whose very letter is to be held sacred. If we seek hints towards manual occupations suitable for young children, we must have recourse, not to the mere externals of a system which, excellent though it be in principle, was yet devised by a mystical reformer who lived in another country and in another century; but rather to the pervasive idea of that system—the idea that play stands for the child's natural and normal mode of reacting upon *his own* surroundings. No one will, of course, contend that a formal scheme of block-building, tablet-laying, paper-cutting, mat-weaving, stick-laying, and clay-modelling is of great value as an end in itself. We have agreed too, not to allow ourselves to be misled by the plea that tedious and useless exercises are justifiable so long as they "train the faculties". The enlightened teacher of infants will therefore find no definite place in her scheme for "Gift V." or for "paper-folding"; but she will find a very prominent place for any manual employment, whether or not it happens to have a place among the "gifts and occupations," which has a meaning and purpose, from the child's point of view; which helps the child in the outward expression of ideas that are already there, waiting and perhaps

struggling for such expression. This is as much as to say that manual occupations should be brought into organic relation with the rest of the child's doings, both in and out of school. Blocks, tablets, sticks, paper, clay—all or any of these materials *may* be pressed into the teacher's service, so long as they serve the purpose of enabling the child to express with his hands an idea of his mind. Such an idea may arise, for example, out of a previous story-telling lesson; or it may be the idea of some common object which will help to equip or to decorate the schoolroom or the nursery. A doll's house, too, will furnish endless suggestions for suitable occupations.

(*b*) In the primary school.

Manual employments, which have found their way into the training of young children through the influence of the Froebel movement, and into the training of children upwards of eleven or twelve years of age as an incidental effect of the organisation of technical instruction, have been comparatively neglected in the case of boys and girls of intermediate ages. The omission, it hardly need be said, is entirely without justification. The sort of material in which the child is to express himself will, however, need careful consideration. Some of the occupations proper to the Kindergarten would be too childish for a boy of nine or ten, whereas he is as yet too young to handle ordinary cutting tools with ease and safety. Modelling in clay suggests itself as an occupation suitable to his years, and capable of extremely varied applications. We must again beware of tedious preparatory exercises of a formal character. There are those who tell us to begin with the sphere, and to evolve therefrom the forms of oranges, lemons, apples and pears; to go on to the cylinder, and to connect therewith the forms of candles, cigars, bottles, and pencil-cases; thence to the cube, in whose train will follow boxes, crosses, and pyramids; and so forth. A certain interest undeniably attaches to exercises such as these, because they are a welcome relief from bookish occupations. But they fall short of the true idea of manual instruction, since they are not closely related to the general curriculum, and merely constitute, in fact, an additional "subject". Clay-modelling fulfils its proper function when it is connected with geography, history and nature-study. The

moulding of the mountain systems and river basins, the fruits and seeds, the battle-fields and encampments, that have come up for study in other lessons, exemplifies the true use of a manual employment—the translation of head-work into hand-work. Cardboard-modelling and paper-cutting, though inferior in some respects to clay-modelling, may at times be similarly employed at this stage.

(c) For older pupils.

For boys over eleven or twelve years of age, manual instruction is commonly understood to have special reference to wood and metal work. Gardening is sometimes substituted or added, and cookery and laundry are regarded as parallel occupations for girls, but the parallelism is obviously incomplete, since these are specialised occupations, incapable of many connections with other studies. Taking woodwork as a typical manual employment for this period, we may distinguish two or three different modes of arranging the course. In one kind of woodwork the process is accounted all-important, whilst the product is the merest incident. For example, the pupil is for a considerable period confined to formal exercises in making different kinds of joints, the skill thus attained being afterwards utilised in the construction of boxes and other articles. This plan is clearly analogous to the synthetic methods we have noticed of teaching writing, reading, and drawing, and ought similarly to be kept within bounds; otherwise the aims of manual instruction in the school are confused with those of an apprenticeship in joinery. Once more we find it necessary to protest against a dull course of preparatory exercises, even though they may yield a formal training of hand and eye. A second plan is that of which "sloyd" is the standard instance. Here the product is reckoned more important; it is at least an article that has a value and meaning in itself, either for the pupil or for some one else—a paper-cutter, a ruler, or maybe a pipe-rack. But again the article that is fashioned is quite a secondary matter, the first consideration being progressive exercise in the use of certain tools and materials. A plan of this kind is a clear advance upon the first, and doubtless any system of exercises must in its early stages be graduated to some extent according to the tools to be employed. From our point of view, however, no form of manual training can be satisfactory unless it makes the product

a cardinal consideration, and unless, therefore, it is brought, like the drawing exercise, into organic connection with the rest of the curriculum or with the pupil's out-of-school life. In other words, the thing made, whether it be of wood or of any other material, must express an idea which, from the pupil's own point of view, stands in need of such expression. Dr. Stanley Hall has suggested "curricularised toy-making" for the lower grades of manual instruction, merging over, in higher schools, to the construction of apparatus illustrating scientific principles;[1] and this is doubtless the direction in which we should look and work for reform. It must be confessed, however, that "the correlation of manual training with other departments is in a state of evolution and will not be accomplished in one year, nor by one man. The results must be obtained by the co-operation of all the teachers. It is only when the class teacher submits suggestions of articles which will help his work, and the manual-training teacher puts them into form and brings out the principles of construction, elements of geometry, and tool practice which the child needs, that the best results will be reached."[2]

PHYSICAL EXERCISES. (*a*) For young children.

Until the child is nine or ten years of age, the main condition of sound *physical development*, so far as this depends on exercise, is that he should have ample time and room for giving full vent to his natural activity. Such games as he shares in will therefore be of the romping and gambolling order. The time has not yet arrived for elaborately organised games in which each player has a responsible part to fulfil and in which the element of contest appears. Side by side with this free play it will be well to give a certain amount of formal gymnastic exercise, carefully adapted to the child's strength. As was intimated in Chapter VII., the Swedish system of drill, or some adaptation of it, is very suitable for young children, one of its advantages being that no apparatus is necessary.

At nine or ten years of age the child will begin to take part in organised games of a simple character, leading a couple of years

[1] See *The Pedagogical Seminary*, June, 1902.

[2] F. H. Ball in the *Elementary School Record* (Chicago University Press), No. 7.

later to the universally known cricket, football, tennis, hockey, and the like. As we have before pointed out, it is not until he is about twelve years of age that the pupil's muscles will so develop as to enable him to become athletic, and care should be taken to prevent premature attempts in this direction.[1] Along with games, gymnastics and drill will receive further development. Without attempting to decide between the rival systems of scientific physical training, we may point out that these exercises should never be carried to the point of undue fatigue, that they should take place, as far as possible, in the open air, that they should be performed briskly and precisely, that they should be designed with a view to all-round development rather than to mere display, and that they should be made as varied and interesting as the circumstances permit. With reference to gymnastic exercises, it is exceptionally important that every pupil's case should be considered individually; the same *régime* should not be applied to the strong and to the delicate, to those who walk three miles to school and to those who live next door.

(*b*) For older pupils.

We have now considered how the material of each branch of instruction should in general be distributed throughout the years of school life. There awaits the teacher, however, the further task of dividing the material into the smaller portions which constitute a detailed syllabus. It is not enough that he should begin the school term with a hazy idea of the ground he hopes to cover. He may not, indeed, be able to forecast with nice precision how much can be safely attempted in the period, and due allowance must be made for this uncertainty. But the experienced teacher who knows his class will be able to make a sufficiently shrewd guess; and if he does not know the class he should take the advice of some one who does. The course should be carefully mapped out in sections or topics whose content and sequence are determined, like those of the broader divisions we have been discussing, by the teacher's knowledge of the subject, on the one hand, and of the child on the other. In this matter he should leave nothing to chance or caprice, and he should not leave everything

The construction of detailed syllabuses.

[1] See p. 77.

even to the best of text-books, lest his teaching be robbed of the vitality which comes of putting something of one's self into one's work.

In planning out the series of sections or "method units" care should be taken that, whilst each of them marks a distinct step forward in the mastery of the subject, the length of the step is determined by the difficulty of the subject, and by the age and capacity of the pupil. The rule of simple subtraction, for instance, though it may seem to a pedagogic tyro a fair example of what is here meant by a section, really consists, as the experienced teacher of young children knows, of several sections, each of which introduces a fresh point of difficulty. Again, the sections determined upon should form a connected series, each member of which goes back upon the preceding one and reaches forward to the next; so that they are fitly symbolised, not as A, B, C, etc., but as A-followed-by-B, B-following-A-and-followed-by-C, and so on. This principle of continuity takes care of itself in mathematical subjects, but it should hold no less in other branches. Finally, each section should contain some central idea or theme which ought to be stated in set terms. The danger to be avoided here is "woodenness". A mere list of the sovereigns whose reigns are covered by the period of history, or of the political divisions of a continent; a bare numerical reference to the acts and scenes of a play, or to the propositions of a geometrical treatise, or, worse still, to the chapters or pages of a book, cannot pass muster as a syllabus. A syllabus of historical instruction should show the great movements or events that are successively to be studied, and the sections of a course of lessons on a play should make specific reference to the development of the plot.

A practical difficulty.

A somewhat serious practical difficulty lies in the way of any such ordered consecution of studies as that described in the present chapter. Our latent assumption has been that the several branches of instruction will be divided and arranged so that a definite amount of work is assigned to each year of school life; and we have further assumed that the pupil will generally spend a year in each successive class, according to the prevalent practice in the higher schools of Germany and other

Continental countries. The custom of many English secondary schools is to admit new pupils, without question, at the beginning of the term, and to make promotions from class to class at the end of the term. It is obvious that this plan lends itself far less readily to orderly intellectual progress; and much would be gained if public authorities, teachers, and parents appreciated the great advantage of new pupils being entered at the beginning of the school year. Practical reform in this direction is hardly to be looked for, however, until English secondary education becomes more definitely organised.

REFERENCES

The subjects dealt with in Chaps. VII. and IX. are treated in all the comprehensive books on teaching. The various branches of instruction are dealt with separately by specialists in Barnett's *Teaching and Organisation;* Spencer's *Aims and Practice of Teaching;* Adam's *The New Teaching;* and Adamson's *Practice of Instruction.* For discussions of separate subjects by one writer see Findlay's *Principles of Class Teaching,* chaps. vi.-ix. See also *Report of Committee of Ten on Secondary School Studies* (U.S.); Russell's *German Higher Schools,* "Curricula for German Higher Schools" in *Special Reports*, vol. iii., Welton's *Principles of Teaching,* and the Board of Education's *Suggestions for the Consideration of Teachers.*

Besides general views like those mentioned above, numerous works on the teaching of the several branches of the curriculum claim the attention of specialist teachers. The literature of "special method" has indeed become so extensive in recent years that a moderately representative selection of titles would fill several pages of this book. For all subjects, except foreign languages, reference may usefully be made to the *Selected List of Books for Students,* compiled and issued by the National Froebel Foundation. The list is of wide range, and is not restricted to the needs of teachers of young children.

On the teaching of Scripture efficient guidance is afforded by the Institute of Christian Education.

CHAPTER X

THE CORRELATION OF STUDIES

"Facts and ideas have a real and useful influence over the mind only when the mind systematises and co-ordinates them with other facts and ideas as they are produced"—GUYAU.

General nature of problem.

IN the last two chapters we have explained and illustrated the principles that ought to guide the teacher in arranging the course of instruction in the several branches, so that the work done in each of them may be suitable to the pupil's stage of development, and continuous throughout the years of school life. But at many points in our discussion the fact has forced itself upon our attention that the ordinarily accepted divisions of the curriculum are not so independent of one another as we began by assuming them to be; that indeed there is often a close and vital connection between studies commonly regarded as distinct. We need, therefore, to survey the curriculum not only in its length but also in its breadth; we need to attend not only to the sequence of study in each branch, but also to the connection that subsists between those branches that are being concurrently taught. In other words, supposing the scheme of instruction for a given period to be set forth in tabular form, there will be both a horizontal and a vertical connection calling for the teacher's forethought.

Obvious need of correlation.

That the connection between the different studies and exercises of the school should receive *some* attention is a proposition which we may well regard as an axiom, since the entire neglect of that connection would carry us, and has carried many, to considerable lengths of absurdity. No serious argument is needed to prove that the various subjects of

instruction should not be regarded as so many closed compartments. Yet this absolute separation is exactly what has happened in the past—a sufficient proof, if any were required, that "ordinary common sense" is not an adequate guide to the art of teaching. The two intimately related arts of expression, reading and writing, have been treated as quite distinct; the close relations between geography and history, arithmetic and algebra, have been largely ignored; and the grammars of different languages have called the same ideas by different names. The best writers and teachers have, indeed, long insisted upon the more obvious instances of the need of correlation. That reading and writing should be taught together is by no means a new proposal; and the best school historians have never neglected those geographical considerations without which the facts of history are gratuitously obscured. In recent years, however, there has been a marked tendency, at least in the sphere of primary instruction, to emphasise and extend the principle of correlation, and it may be well to inquire briefly into the causes of this tendency.

Causes of recent attention to the subject:—
(1) Crowded curricula.

First among these we may place the common complaints of crowded curricula—complaints that are justified by the facts. English primary teachers, for example, have been wont to groan under the weight of some twenty so-called "subjects". Such a requirement is *primâ facie* a ridiculous one, and there is little doubt that much has been included that should have been omitted. At the same time, it must be confessed that this particular complaint rests in part upon assumptions that will not bear investigation. It is often assumed, for example, that grammar and composition are to be separately treated, whereas, as we saw in the last chapter, the only grammar worth teaching in a school is that which bears practically upon composition. Similarly, oral and written arithmetic, reading and recitation, arithmetic and mensuration are sometimes separated, both in the time-table and in the minds of teachers and scholars, though their close connection is sufficiently obvious. It was long felt by the more thoughtful teachers that this chopping up of the material of instruction into so large a number of relatively independent portions

was a mistake, and the present tendency is to diminish the number of "subjects" by bringing together those that are closely related. The objection may, of course, be raised that by adopting this plan we are lessening only the number of divisions and not the actual amount to be taught. In practice, however, an advantage is certainly gained, because where a subdivision of one of the main branches (say grammar, a subdivision of English) is given a substantive and separate position, a place is usually found for it in the time-table of every form, and for the whole school year, whether this is really necessary or not; whereas by regarding it as a part or aspect of a larger study we are likelier to lay much or little emphasis upon it at different times, according to the requirements of the child's education as a whole. For many years, for example, children of seven or eight in our primary schools were required to learn to point out nouns, those of eight or nine to point out verbs, and so on—an exercise which needed separate recognition on the time-table, and which, by the way, could be performed only by a course of tedious drill. The sole reason for this stupid practice was that grammar and composition were separately "paid for" by the State, therefore separately examined, and therefore separately taught. Precisely similar remarks apply to reading and recitation. Fortunately a readjustment of the system of grants has resulted in an English course which combines the formerly scattered elements.

(2) Artificiality of treatment.

A second reason for the greater importance now attached to correlation is that the neglect of the relations between the various studies has led to artificial and unpractical treatment, and consequently to loss of interest and bad economy of effort. A noteworthy illustration of this point is seen in that separation of pure from applied mathematics which has hitherto prevailed. The contentions of recent critics of the formal and abstract teaching of mathematics are at bottom largely an unconscious plea for correlation. They point out that the pure mathematician has gone on his own way, ignoring, in the selection and treatment of topics, the requirements of the pupil in other branches of study, and refusing to treat his subject with due regard to its practical bearings. He has chosen, for instance,

to fill the text-books of algebra with examples of an academic character, many of them expressly designed to illustrate processes which are of rare occurrence outside the region of pure mathematics; the favourite books being just those which reduce to a fine art what has aptly been called example-grinding.[1] The strong bias in favour of closed systems of academic exercises is clearly seen, too, in the long-continued supremacy of Euclid's Elements as the text-book of geometry in this country, to the exclusion of methods which can be turned to greater practical account in other branches of instruction. Similarly, in the primary schools, algebra, where it has been taught, has not been approached naturally as a generalised arithmetic, but has been treated as quite an independent "subject," involving from the first the manipulation of mysterious sets of symbols, the meaning of which the pupil often does not remain long enough at school to understand. Meantime, arithmetic has pursued its own course, the boys being puzzled with difficult questions of a commercial character, which are really a bit of technical instruction, lying for the most part quite outside the pupil's present range of effective ideas.

(3) Employment of specialist teachers.

The isolation of subjects, and the sacrifice of the advantages of working at them connectedly, is no doubt partly due to the employment of specialist teachers. The relative advantages of employing specialists and of entrusting most of the instruction to form-masters, are discussed elsewhere. All that we need say here is that, though the specialist is obviously more and more necessary as we ascend the "educational ladder," yet nowhere should he expect to have his own way entirely. He should remind himself that, after all, the staff of a school is, or should be, working for a common end, and that

[1] A well-known contriver of the conundrums which De Morgan was accustomed so roundly to denounce, adopted for his book of mathematical problems the following most appropriate motto :—

"Deduct what is but Vanity, or Dress,
Or Learning's Luxury, or Idleness;
Or tricks to show the stretch of human brain,
Mere curious pleasure, or ingenious pain
. . . .
Then see how little the remaining sum."

community of aim implies a willingness on the part of each member to see his subject as a factor of an organic whole, rather than as an isolated fragment. The drawing-master, for example, is apt to pursue courses which, though perhaps extremely appropriate as a technical training for young artists, are not so well adapted to the purposes of a general education. It may appear that drawing can be brought into helpful association with history or botany or physics; and if so he should be ready to recognise this advantage, so far, at least, as the pupil's progress in technical skill permits.

The foregoing pleas for correlation, suggested as they are by evils which every thoughtful teacher has in some measure felt, will probably, so far as they go, carry conviction to most minds. Total neglect of the natural affinities of the subjects of instruction undoubtedly increases the embarrassments caused by crowded curricula; it shuts out the light which one study often sheds upon another; it leads to artificiality of treatment and loss of interest; it deliberately trains the pupil to take a false view of knowledge as a mere agglomeration of independent parts, and, to crown all, it leaves room for diversities of aim where the aim is essentially one. But we must now consider briefly an argument which, notwithstanding its favourable reception in some quarters, may well give us pause.

(4) "Herbartian" doctrine of concentration of studies.

Upon the essential unity of the educational aim to which reference has just been made, some of the disciples of Herbart have based a doctrine of correlation which, if carried generally into practice, would have far-reaching consequences. Starting from the proposition that the ultimate aim of education is the formation of character—a proposition which we have seen reason to regard as profoundly true—they easily reach the conclusion that the humanistic group of studies, abounding as these do in moral ideas that directly subserve the all-inclusive end, ought to take precedence in the school curriculum. But, more than this, since character depends upon will, will upon desire, desire upon interest, and interest upon the "circle of thought," in which "the whole inner activity has its abode," it follows that the main business of

education lies here, for a strong character can be formed only by cultivating an extensive and coherent "circle of thought". "Those only wield the full power of education," says Herbart, "who know how to cultivate in the youthful soul a large circle of thought *closely connected in all its parts*".[1] A loose aggregate of ideas floating in the mind must result in a chaotic will, and in an irregular planless life; and unconnected groups of ideas, even though each group be well-knit within itself, must mean at least a divided will, whose plans do not hang together, and whose acts tend to inconsistency. The man who keeps his religious ideas in one compartment of his mind and his business ideas in another, is the stock example of what is meant.[2] Let the "unity of the circle of thought" be destroyed, and then farewell to unity and strength of character.

Its practical effect.

Such, briefly and incompletely stated, are the theoretical grounds upon which rests that extreme method of correlating studies known as the plan of "concentration". It is thought that the desired unity is best attained by making a certain study the centre of the instruction-plan, and by grouping the others round it in positions of greater or less subordination. On account of its rich and ethically important content, history, including story and legend, is made the central theme. The literature is chosen on the ground that it bears upon, or arises out of, the historical instruction; as also are the school songs. Drawing and modelling may be connected with the history of architectural styles, and with castles, armour, ships, coins, and other objects of historical interest. Language constitutes the formal side of the historical material. It is confessed that when we come to the natural sciences and to mathematics graver difficulties stand in the way of concentration; but the more stalwart advocates of the plan attempt to surmount these difficulties by treating geography as an associative subject, having affinities both with the human and with the scientific groups, and by regarding nature from the standpoint of human purposes.

[1] *Science of Education* (Felkin's trans.), p. 92.
[2] *Cf.* Rein, *Outlines of Pedagogics* (Van Liew's trans.), pp. 105, 106.

As an illustration of the plan of concentration, we may refer to a curriculum proposed for children between seven and eight years of age. An adaptation of the story of Robinson Crusoe is made the centre round which the rest of the instruction is grouped. The lessons on objects are suggested by the story; the sea, a ship, an island, a raft, are regarded as suitable topics. The drawing and the modelling lessons are suggested by the object lessons. The children read passages from the story of Robinson, as well as from a general book on matters discussed in the other lessons. They write simple compositions on the subjects of the lessons. Their sums are suggested by the problems which might have presented themselves to Robinson, and they may appropriately recite and sing "I am monarch of all I survey".

Illustrations.

Concentrated schemes suitable for older scholars are similarly devised. A series of lessons on the French campaign of Henry V. might, for example, be accompanied by the reading of Drayton's *Ballad of Agincourt* and parts of Shakespeare's *Henry V*. The children might write essays upon historical topics that readily suggest themselves. They might draw fifteenth-century ships, swords, and shields, and the equipment of an archer. They might study the portions of geography suggested by the expedition, and draw illustrative maps. Arithmetical calculations might be made concerning the number of men, the rate of their pay, the supply of provisions, the prices of food, and the cost of the war. The more thorough-going advocates of correlation do their best also to find pegs in the historical matter upon which to hang information of a scientific kind. Thus the Spanish Armada suggests to the ardent exponent of the theory of concentration lessons upon winds, currents, storms, and ships' compasses.

Before offering any remarks in the nature of criticism, we may take note of another scheme of concentration, which has been put forward in connection with the recent movement in favour of laying greater stress upon the study of natural phenomena, and which makes that study, rather than history and literature, the theme of central interest. This movement has its home in America; it is associated

Another plan of "concentration".

in great measure with the honoured name of Colonel Parker;[1] and it has found expression in a large body of literature, some of which is of a high degree of merit. It is pointed out that nature-study may form the basis of the expressive work of the school—the drawing, modelling, singing, and much of the linguistic instruction; that the reading and literature may be selected so as to chime in with the nature lessons; that the connection between nature-study and geography is close and constant, and that nature-study furnishes material for concrete work in arithmetic. It is, indeed, admitted, and sometimes even emphasised, that this is not the whole story; that there are limits to the plan of making nature lessons the basis of drawing and singing; that reading and literature must refer to human as well as to nature studies; and especially that too close a correlation between nature-study and arithmetic tends to spoil both—the nature lessons by the stress thus placed upon such details as happen to lend themselves to the purpose of counting and weighing and measuring, and the arithmetic by failure to provide for the definite and systematic exercises so essential in that subject.[2]

Remarks on preceding plans.

(1) Danger of too much attention to one study.

Perhaps the first thought that would strike a teacher accustomed to work on orthodox lines, upon a consideration of these schemes of concentration, is that they involve some danger, to say the least, of the undue exaltation of one particular study. The very fact that different plans are advocated by the "Herbartians," and by those who, under the influence of the Froebelian movement, would make nature-studies the centre, suggests that these schemes owe their origin, partly at least, to the special interests and proclivities of those who propose them. This is, of course, no argument against co-ordination, nor even against concentration, when the latter takes the form of making now one and now another study the temporary centre of the instruction. But it *is* an argument for the exercise of due care in allowing oneself to be influenced by any one-sided scheme. Some believe in making human studies a permanent central theme, because of

[1] See his *Talks on Pedagogics.*

[2] *Cf.* Scott's *Nature-Study and the Child*, chaps. xi.-xiii.

their valuable ethical content; others think that nature-studies should take that position, because they make a direct appeal to some of the strongest of the child's instinctive interests. The wise teacher will refuse to throw in his lot with either side, but will not refuse to accept suggestions from both.

(2) Applicability to younger children.

It is a striking fact, too, and one which calls for explanation, that the most satisfactory examples of concentration appear to have reference to the instruction of young children. Is this only because a readier field for experiment lies in this quarter, or do we here come upon an essential limitation of the principle? The latter certainly seems the right explanation. For the small child looks out upon the physical and social world into which he has not long been born with a very different pair of eyes from those of an adult, or even of older boys and girls. To him that world presents itself as a vague undifferentiated whole. *He* has not yet learned to regard it, now from the quantitative point of view, now from the geographical, now from the historical, and anon from the æsthetic. The "subjects" about which we adults talk so glibly, and which really represent so many ways in which our interests incite us to map out the world's contents, are for the child non-existent. He has not yet learned even to make the broad distinction between man and nature. His central interest is in people, in their occupations, and in the natural objects which they use in following those occupations. Now at this stage, as at all others, we do well to take the child as we find him; we do well to choose some portion of his surroundings, to invest it with human interest and to turn it round so that he may see it from different points of view, with the result that the drawing and modelling, the poem, the story, the song, the number lesson, the reading and writing exercise, may all arise out of the same central theme. Rightly considered, the problem here is not one of correlation, but of differentiation; not of associating ideas that were previously unconnected in the child's mind, but of dissociating the several elements of what is at first a vague unity. The child's budding powers of analysis will gradually enable him to differentiate more distinctly, and to fix his attention now on one and now on

another aspect of the total environment, to the relative exclusion of other aspects. When this time comes, and he is ready for a more decided differentiation of studies, he will be the gainer, both in power and in achievement, by pursuing distinct lines of inquiry. We must hasten to add, however, that separation implies connection; that a distinction implies a bond. Hence the different paths of investigation will be united by associative links, which will be more or less numerous and important according to the logical and other affinities of the several studies.

Association of the members of each definite group of studies.

An obvious and important class of connections will be those that exist between the subjects included in each of the definite groups of studies. In the mathematical group much harm has been done by a more or less complete severance of the branches taught in schools. The exclusion of algebraic methods from arithmetic has had the effect of needlessly limiting the pupil's range of ideas, and of artificially prolonging the study of arithmetic long after the more powerful methods of algebra might easily have been employed. At a higher stage, the study of algebra has been similarly carried to a needlessly high pitch before the elements of trigonometry and analytic geometry have been taught; and an exhaustive treatment of the latter has been wrongly preferred to an earlier introduction to the calculus. Again, the portions into which the study of the mother-tongue naturally falls—speaking, reading, composition, and grammar—should, as we have seen, be closely associated; and foreign languages should be connected with the native tongue, as well as with each other, in all helpful ways. The study of nature will in the first instance form one "subject," but afterwards, when the time for differentiation comes, the several branches should be taught in the light of one another. Finally, the human group of studies, and, in particular, literature and history, may with great advantage be correlated. By all means let the pupil connect Agincourt with Drayton's ballad, the story of Boadicea with Cowper's poem, the Conquest of Wales with Gray's *Bard,* Waterloo with the well-known lines in *Childe Harold,* Wellington with Tennyson's great *Ode*; and, wherever possible, a period of

English history with a corresponding play of Shakespeare, read for its own sake rather than for the sake of its linguistic peculiarities. On the prose side, too, the history lessons should have the effect of sending the pupil to *Hereward the Wake* if the subject be the Norman Conquest, and to *The Talisman* and *Ivanhoe* if the Middle Ages be the theme.

Association of theoretical studies with practical pursuits.

Another highly important and still more neglected class of associations may be advantageously effected between the two groups of studies roughly marked off as theoretical, those in which understanding and learning are the pupil's prime concern, and practical, those in which doing or producing something is the essential feature. Among the latter we may reckon reading, composition, drawing and other manual arts, and music. So long as separate reading lessons are necessary, they may be correlated with various other branches, both of the humanistic and the naturalistic groups. Subjects for essays should, as we saw in a former chapter, be suggested by the pupil's other studies as well as by his life outside the school. The school songs should be the expression of what the child has felt, of emotions that have stirred him, and they are therefore rightly suggested by the nature or the history lesson. Drawing may be correlated with most of the studies we have called theoretical, and manual employments should give outward expression to ideas gained from history and natural science; to teach these purely from the artist's or from the workman's point of view is to miss their import for the purposes of a liberal education.

The true principle of correlation.

Such, then, are some of the specific instances in which the close correlation of studies is not only desirable but even necessary if the curriculum is to be an organic whole and not a mere aggregate of independent parts. But is there no single guiding principle under which these and all other examples of legitimate correlation may be conveniently and helpfully summed up? We think that such a principle may be formulated somewhat as follows: In giving a lesson or a series of lessons upon any particular topic, the teacher should press into his service every bit of allied material *which will help towards a*

completer grasp of the topic under consideration. He should do this without fear of unduly mixing up different "subjects," since these are after all only a convenient means of classifying and pigeon-holing our knowledge. If, for example, the lesson be upon a certain portion of history, he will not hesitate to turn aside and make it for the nonce a lesson in geography or drawing or literature, provided such a mode of procedure will aid in the more thorough comprehension of the portion of history in question. To this extent there is certainly such a thing as a wise discursiveness in teaching. We may go further and say that, even after studies have become fairly differentiated, the course of instruction in any one subject may for a time be definitely framed with a view to its bearing upon another subject, provided such an arrangement is a real help to the comprehension of the second, and is not a hindrance to the orderly development of the first.

Superficial correlation to be avoided.

Having said so much, we must now place ourselves on our guard against so-called correlations which are not justified by the requirements we have laid down. Whether lessons on the voyages of Columbus shall lead to a full consideration of ocean currents and sargasso seas, and whether the Spanish Armada shall suggest calculations of the expenses of big expeditions, are questions which must surely give rise to grave doubts, for in these cases the secondary topics do not assist towards a completer understanding of the primary ones. Plainly we are here perilously near the deliberate cultivation of mere irrelevance and birdwittedness. It may be doubted, too, whether the great importance of France in the history of England during the fourteenth and fifteenth centuries is a sufficient reason for exclusive attention to France in the concurrent geography lessons, though it may be a very good reason for modifying the order of geographical instruction so that France is studied at a point convenient for the purpose. Still more may we take leave to doubt whether the study of a small portion of a Latin author should involve exclusive attention at the time to the *ad hoc* study of a limited period of Roman history. Certain of the great representative studies pursued in schools possess a unity and a continuity of their own, which cannot be freely violated without

seriously diminishing their disciplinary value, and without introducing a worse sort of incoherence than that which we are seeking to avoid. With respect to these, we must follow the order dictated by the nature of the subject and by the pupil's stage of mental development, taking advantage, however, of the multitudinous opportunities that will arise of really helpful correlation. It *may* be a good thing to connect the history of a war with calculations of its cost, but it may just happen that in so doing we are departing from the true arithmetical sequence, and neglecting the far more relevant applications of arithmetic to problems of everyday life, whilst at the same time we are throwing no new light on the historical topic. It *must* be a good thing, however, to connect the history of a war with the geography of the country in which it was waged (whether this be done in the history or in the geography lesson), because only in this way can the historical subject be adequately grasped.

We conclude, then, that the various lines of study which are followed in the school, and which we have dealt with from different points of view in the four preceding chapters, should be co-ordinated in all ways that may subserve breadth of view, easier mastery, and genuine elasticity of mind. But let us beware of strained and artificial collocations of ideas that have a merely adventitious connection. To be sure, the universe is one; threads of relationship run through "the whole choir of heaven and furniture of earth," and if our pupil ever becomes a philosopher he will doubtless make strenuous efforts to comprehend this fact of unity. Meanwhile, we do not help him by forcing upon his attention all manner of superficial and inessential relations.

The psychological basis of the doctrine of concentration criticised.

What, then, are we to say of the theoretical basis, referred to a few pages back, of the doctrine of concentration held by some of the "Herbartians"? If we disagree with the practical inferences which they draw from their psychological theory, we are bound to point out where the theory appears to go astray. We are bound, in other words, to show the inadequacy of the thesis that the strong and undivided will which the doctrine rightly desiderates is secured by aiming directly at "unity and connectedness

in the circle of thought ". In the first place, too much stress appears to be placed upon the function of knowledge in the development of character. That " vice is ignorance," and that " a stupid man cannot be virtuous," are, after all, paradoxical sayings, containing an important element of truth, but not the whole truth, and the weakness of the Herbartian psychology is illustrated by the fact that these paradoxes are taken too literally and too seriously. The function of knowledge is so to illumine the will as to make a man at least capable of living as becomes a man; but the roots of will, nevertheless, lie in those primitive impulses to action which are just as original and fundamental as the presentations of which the Herbartians make so much. Hence it is that a highly cultured man, whose knowledge may be as unified and connected as you please, may on occasion take to vicious courses, through the influence of bad examples or the formation of bad habits in early life, or through one of those disorders of the will—aboulia and the like—which seem to be independent of intellect. Hence also it is that a man whose range of ideas is extremely narrow may live on a relatively high moral plane, because he is fortunate enough, perhaps through the early influence of a good example, to see certain important things clearly, and to possess an original force of will which enables him to live consistently in the light of these. When, therefore, " large unbroken masses of thought " are prescribed as a sure " salvation amid the storms of fate," the answer is that salvation has assuredly been found where that prescription has not been followed, and lost where it has been followed.

Still, while we thus deny the supreme efficacy of instruction in the formation of character, we have fully admitted, and indeed strongly emphasised, its great importance. There is no gainsaying the fact that much of the wrong-doing and misery in the world is the result of ignorance, and that if we want to improve the moral condition of our people we must give them the chance of finding their pleasures in worthier objects. Hence the moral significance of instruction. But this significance is not enhanced, the development of a strong and undivided will is not furthered, when we strive for " unity and connectedness in the circle of thought " in

the naïve fashion of certain Herbartians. No school pursuit can ever become a moral force in a person's life unless it assume a position amongst what we commonly call his interests; no such interest is ever evoked unless the subject be well understood or the art intelligently practised; no subject is ever well understood and no art is intelligently practised if the light which other studies are able to throw upon it is deliberately shut out. This we take to be the true principle of correlation; and this means that in teaching any given subject we should avail ourselves of other subjects so far as these will help towards the completer understanding of the thing in hand; it does *not* mean that we should go forth to seek connections that do not naturally suggest themselves, under the mistaken idea that we are thereby securing unity in the circle of thought. If we apply faithfully and thoroughly the principle just enunciated, we may leave that unity to take care of itself. The sort of unity that is secured by the artificial forms of correlation we have described is premature and useless. The unity that is worth attaining is to be secured, not by aiming directly at connectedness in the circle of thought, but by aiming at connectedness in one's practical purposes. If, for example, one of the practical purposes of a man's life is to make himself efficient in his profession, then all the knowledge he acquires in carrying out that purpose is likely enough to bear the stamp of unity. If, further, he aims at personal efficiency in his domestic, social, and civic relations, then his circle of thought is again likely enough to possess as much of unity and connectedness as his case admits of. Similarly, if we train our pupils to put to use every bit of knowledge they acquire, and if, moreover, we make sure that the uses to which they put their knowledge are coloured by one grand and all-pervading purpose—that of becoming capable and honourable members of society, then the unity and connectedness of their knowledge is sufficiently guaranteed.

"True concentration," says a thoughtful American writer, "is not the strained and mechanical bringing together of diverse subject-matter into the same recitation, but fixing the attention on all the relations of the given subject, and thus drawing into the movement the other subjects required for the mastery of the one

under consideration. . . . If the thing be taught in the only way it can truly be taught, whatever subjects are needed will inevitably be drawn into the process."[1] To much the same effect Dr. S. S. Laurie writes: "It will be generally admitted that the number of separate subjects that now clamour for admission into schools makes it necessary that the master should select his course so as to give as much unity as possible to the instruction-plan. But any attempt to achieve this unity in an artificial or mechanical fashion will certainly fail in its practical working. It is enough, I think, that the master himself should have a governing educational idea, and along with this certain central points of instruction. This will give unity and correlation to his teaching. All successful grouping of instruction depends on the teacher himself, and on the width of his culture. If he has himself a well-stored mind, he cannot fail to see how a lesson in geography suggests relations to history and economics and nature knowledge—relations which should be elicited from his class, so far as relevant to the lesson of the day. In a language lesson . . . he will seize the endless opportunities which such lessons give him to extend and deepen the knowledge of the pupil, and to build up moral and literary culture. In arithmetic even he will, by the concrete character of his teaching, establish relations between almost every subject in his curriculum and arithmetic; for the questions which he propounds for solution may be geographical, historical, and economic. There is thus in the hands of a capable master a constant concentration going on which counteracts encyclopædic particularism. All the subjects in the instruction-plan, if properly taught, are woven into the rational and ethical substance of the one mind, as it grows from day to day. The young are thus trained to understand their environment, and fitted for the conduct of life generally. In brief, wherever the teacher is at a loss, the ethical purpose of all education will always give him a centre of instruction."[2]

We have seen that some form of concentration is from the nature of the case appropriate to the instruction of young children, but that further on in the course of study everything is to be

[1] Arnold Tompkins, *The Philosophy of Teaching*, p. 261.
[2] *Institutes of Education*, Lect. xix., pp. 264, 265.

gained by frank differentiation of subjects, provided their real affinities are constantly recognised. We may now add that still later, when the period of specialisation arrives, the idea of concentration may again prove exceedingly fruitful. The narrowness of the mere specialist is proverbial, and need not here be enlarged upon. But healthy specialisation does not produce the high-and-dry specialist.[1] There is no subject which, if rightly pursued, may not prove a "flower in the crannied wall". Classical studies branch out into geography, history, philosophy, archæology, and the rest. Again, how much is lost by the student of mathematics and physical science who neglects the history of those subjects. The story of the gradual development of the modern sciences of geometry and chemistry yields just that human touch, and just that relief from the sense of narrowness, of which the healthy-minded student of science feels the need, whilst at the same time it reacts favourably upon his special studies. Once more, specialism is partly relieved of its narrowness when, again on the principle of concentration, it causes one to master a foreign language in which some of the best literature of the subject is locked up. In fine, the youth who has followed a varied and differentiated curriculum up to the age of sixteen or seventeen, and who then makes the fateful decision as to the branch in which he will specialise, may still be broadly and liberally educated, whatever that branch may be, through a wise observance of Jacotot's maxim "Tout est dans tout".[2]

Concentration as the safeguard of specialisation.

REFERENCES

For the Herbartian view see Rein, *Outlines of Pedagogics*, pp. 101 *et seqq.*; McMurry, *General Method*, chap. iv., and Felkin, *Introduction to Herbart*, chap. iii., sects. 3-5. See also Findlay, *op. cit.*, pp. 39-50. The Herbartian view was controverted by Dr. W. T. Harris in the *Report of the Committee of Fifteen* on the Correlation of Studies in Elementary Schools. See also S. S. Laurie and A. Tompkins, as quoted above.

[1] *Cf.* De Morgan's saying: "Show us a man who never evinced desire to attend to anything but mathematics, and we think we can point out a man who never advanced them one step."

[2] *Cf.* the distinction that has been drawn between "specialism exclusive" and "specialism concentrative" by Mr. G. Smith in his article "A Plea for Specialism," *Journal of Education*, July, 1895 (quoted by Prof. Findlay in *Principles of Class Teaching*, p. 106).

CHAPTER XI

THE PROCESS OF TEACHING

"It is to be stated, in the first place, that precepts and treatises on art are of no avail without the assistance of nature; and these instructions, therefore, are not written for him to whom talent is wanting, any more than treatises on agriculture for barren ground"—QUINTILIAN.

GUIDED by such considerations as those set forth in the last two chapters, the teacher may now be supposed to have divided and arranged the material of instruction in the several branches. At the close of Chapter IX. we saw the importance of definitely dividing the matter to be taught during a given period into a connected series of topics. Such a topic, forming as it does a single unit for the purpose of methodical treatment, may be called a method-whole, or, less awkwardly, a section of the subject in question. Each of these sections, though it looks back upon those that have gone before, and looks forward to those that are to come later, is relatively complete in itself, and should contain some central idea or general truth. As the result of Chapter X. we must now add that, under the conditions there explained, the parallel sections of the various branches of instruction may advantageously be correlated with one another. So far, then, we have been dealing with those principles of method which underlie the formation of schemes of instruction, and which therefore occupy the teacher's mind only or chiefly in out-of-school hours. We now approach the problem of teaching in the more restricted sense—the work which has to be done when the teacher stands face to face with his pupils, and is actually "giving a lesson" in this or that branch of the curriculum. We premise, however, that the treatment of a section or method-whole is not necessarily the same thing as a lesson; it may be completed in a single lesson-period, or it may be spread over several.

The question now arises whether any general principles can be laid down for handling the sections so determined; whether there is such a thing as a normal method of procedure in teaching. At first sight the great variety of subject-matter seems to preclude such a possibility, but we must remember that though the branches of instruction are many and diverse, the person taught is the same throughout; and so it may well happen that, helped out by what we know of the mental movements always involved in the process of acquiring knowledge or skill, we may formulate hints which are very generally valid. That every branch of instruction has its own method is true enough in a sense, just as it is true that every science has its own special methods of investigation. But as the latter fact is consistent with the logician's account of the broad laws of scientific method, so the former may be consistent with a statement of what normally occurs, or ought to occur, when the teacher guides the pupil in the pursuit of knowledge. The art of teaching, like other arts, may have its general as well as its special rules.

Is a general account of the teaching process possible?

But supposing we succeed in formulating a set of general rules relating to the teaching process, the question of their practical worth still remains. It might even be argued that such rules would tend to reduce the process to a mere mechanism, that they would discourage the teacher's originality by saving him the trouble of thinking, and that therefore, so far from being useful, they would be actually pernicious. In reply, we can do no more at this point than appeal once more to analogy. In the practice of other arts the utility of rules is acknowledged, provided the grounds on which the rules are based are rightly apprehended, and provided the rules are taken at their true value—as generalisations to be applied with judgment and discrimination to particular cases. So regarded, rules may save an indifferent practitioner from grievous blundering, and can in nowise fetter the originality of the ablest. Of course "the practitioner who goes by rules rather than by their reasons, like the old-fashioned German tacticians who were vanquished by Napoleon, or the physician who preferred that his

And if so, is it likely to be of practical value?

patients should die by rule rather than recover contrary to it, is rightly judged to be a pedant, and the slave of his formulas ".[1] Yet no one doubts the value of an intelligent study of the rules of the military and medical arts. Similarly, though a study of education which issues in the pedantic application of general precepts is a good deal worse than useless, yet the reflective and judicious application of those precepts may have the effect of raising the teacher from the level of mechanic to that of artist. If we are able to find a normal method of procedure in teaching, its function will be, not to save the teacher the trouble of thinking, but to direct his thinking systematically to the essential features of the process.

Illustrations: (a) From arithmetic.

We shall perhaps best approach the problem before us by considering a few examples of the sort that are of ordinary occurrence in any schoolroom. It will be convenient to choose examples of a strictly elementary character, since these will require no specialised knowledge on the part either of the writer or of the reader, and since the mental act of grasping a new truth is independent of the stage attained in the study of the subject. Let our first illustration, then, be one of the common rules of arithmetic. The wooden method of procedure is simply to state the rule, to work a few exercises, and then to require the pupil to imitate the process by working similar exercises; and if the object of our teaching be merely to enable the pupil to " do sums " and to arrive at answers like those at the end of the text-book, this plan would undoubtedly suffice. But if we desire him not only to " do " sums, but also to understand them, something more is clearly necessary. Matters are certainly improved when we follow up the statement of the rule by giving its reason; and in the course of a mathematical training we may occasionally be justified in asking the pupil to accept a rule or formula temporarily on trust. But if we aim at securing his active co-operation in the pursuit of truth, and at training him to make his own rules instead of requiring him to acquiesce passively in ours, then even this plan needs revision. The method of

[1] Mill, *Logic,* book vi., chap. xii.

demonstration must, in short, usually give place to the method of investigation.

Suppose that a class of children about eleven years of age is receiving a series of lessons on fractions, and that, the meaning and notation of fractions and the reduction of them to their lowest terms having previously been made clear, the next section to be treated is the simplification of an easy complex fraction, such as $\frac{2}{3}$ of $\frac{4}{5}$. As a *first* step the pupils might be required to find the values of such quantities as $\frac{1}{6}$ of £1, $\frac{5}{6}$ of £1, $\frac{1}{6}$ of £5; $\frac{1}{3}$ of a guinea, $\frac{2}{3}$ of a guinea, $\frac{1}{3}$ of two guineas, and so on. The teacher might now propound the problem. What is the value of $\frac{2}{3}$ of $\frac{4}{5}$?' He will thus have brought to the forefront the notions already acquired which bear upon the question, and he will have made the aim of the lesson apparent. In the *second* step the solution may be reached somewhat as follows:—First let us find the value of $\frac{1}{3}$ of $\frac{1}{5}$. How many fifths are there in a whole? If each fifth were cut into three equal parts, what would each part be? How much then is $\frac{1}{3}$ of $\frac{1}{5}$? Then how much is $\frac{1}{3}$ of $\frac{4}{5}$? And, finally, how much is $\frac{2}{3}$ of $\frac{4}{5}$? A few other examples might be treated similarly. The *third* step will be a comparison of the results so obtained, so that the pupils may (with little or no help from the teacher) discern the relation between the complex fraction and the equivalent simple fraction, and then formulate the rule. The *fourth* step will consist in the application of the rule thus established to other examples.

(b) From algebra.

Let us consider next a typical lesson in elementary algebra. We will assume that the pupil can solve a simple equation, that he has just been exercised in the solution of pure quadratic equations, *i.e.*, equations of the type $ax^2+b=0$, and that the next section to be treated is the adfected quadratic, *i.e.*, equations of the form $ax^2+bx+c=0$. Here again the teacher might simply supply a rule and require the pupil to follow it; but if he wishes to increase the pupil's power as well as his knowledge, he will prefer some such plan as the following: As a *first* step, he will require

the solution of a few equations of the type already familiar, and he will then propose one of the second type, *e.g.*, $x^2+2x=15$. The aim of the lesson now stands revealed. A sharp boy may readily give an answer obtained by trial, but the teacher, by changing the 15 to some higher number, say 2,208, will show that this plan is not always so convenient. The *second* step is an attempt, in which the pupils share, to find a more general solution. To find x we must clearly reduce the equation to the simple form, and to do this we must get rid of the second power of x. How can this be done? Only by applying somehow the rule for extracting the square root. What must be added to the left-hand side in order to make it a perfect square? What then must be added on the other side? The equation now stands thus—$x^2+2x+1=16$. We therefore get $x+1=+4$ or -4, and so on. The *third* step consists in setting forth the process in general terms. The pupil, with some prompting from the teacher, will be prepared to say that a quadratic of this sort is solved by bringing the terms involving the unknown quantity to one side, adding to each side such a quantity as will make the first a complete square, and then extracting the square root of each side. In the *fourth* step, this rule will be applied to other such examples—$x^2+2x=63$, $x^2-2x=35$, etc.

But what of such an equation as $x^2+6x=72$, or $x^2+7x=44$? Clearly we need a rule for "completing the square". This will form the subject of the next section. In a subsequent section the case in which the coefficient of x^2 is some number other than $+1$ will be considered. Finally a general rule will be formulated, and the most general form of the quadratic equation will be solved.

(c) From elementary science.

Our next illustration shall be taken from the course in elementary science. Let us suppose that the solid, liquid, and gaseous states of matter have formed the subject of previous lessons, that the expansion of heated liquids and gases has been simply demonstrated, and that the teacher now desires to make clear the less obvious fact of the expansion of certain solid bodies under the like circumstances. As a *first* step he will ask a pupil to recall briefly the chief points of

the previous lesson, and he will then intimate that the aim of the present lesson is to ascertain what happens to certain solid substances when they are heated. The *second* step will consist of experimental work. The teacher will have at hand a few metal rods, and, with the help of some simply devised apparatus, such as any text-book of physics will suggest, will lead the pupils to observe what happens when the flame of the Bunsen burner is applied to any of the rods. The *third* step will be the formulation in set terms of the general truth suggested (though not conclusively proved) by the experiments. In the *fourth* and final step the application of this general truth to certain questions of everyday life will be pointed out. Why are spaces left between the rails on tramway and railway lines? Why are gas and water pipes made with telescopic joints? Why does a thick tumbler crack when hot water is poured into it? How may a stopper stuck fast in the neck of a bottle often be got out, and why?

The steps in the preceding illustrations briefly characterised.

The reader will perceive that in all the examples we have so far dealt with there is a uniform sequence of methodical procedure. The first step recalls whatever knowledge the pupil possesses which is relevant to the new matter; the second step presents the new matter in the form of concrete instances; the third step compares these instances and extracts from them the abstract rule or principle; the fourth step turns this rule or principle to immediate use by applying it to an indefinite number of other concrete instances. And, from the nature of the case, this will be the normal method of treatment whenever a general truth and its application are the upshot of the lesson or of the series of lessons. The steps we have illustrated will therefore hold good at least in mathematical subjects, in the other abstract sciences, including mechanics and physics, and in those language lessons which aim at establishing syntactical and other rules.

We appear, then, to have formulated a plan which exhibits the common characteristics of the teaching process, whenever the subject taught is one in which truths of the abstract and general kind can be comprehended by the schoolboy. But not all the subjects we teach are of this kind. Reverting to the distinction

drawn in Chapter VI. between abstract and concrete studies, we find that our plan must be modified when we are dealing with the latter. In order to illustrate this point, let us consider briefly a section from the course in geography. We will suppose that the teacher is about to give a series of lessons on India to a class of children eleven or twelve years of age, who have already studied Europe and have some acquaintance with the more obvious features of Asia. He will rightly choose to deal first with the physical configuration of the country. As a *first* step, he will ask the pupils to describe the general situation of India, and to recall in particular its position as one of the six great southern peninsulas of Eurasia. He will perhaps seek to arouse interest by referring to, or asking, a question about, some recent event connected with India, and he will then tell the class that India is now to be studied more fully. He will next ask some one to suggest which aspects of its geography should come first in order, and why this sequence is observed. The more restricted aim of the lesson-period will thus naturally be led up to. In the *second* part of the lesson he will perhaps get the children to ascertain, by using the scale attached to the map, the approximate length and breadth of India; and he will then, partly with the help of the blackboard, partly with that of a good physical map, and partly, perhaps, with that of a sand tray, enter into the details—which need not here detain us—of the distribution of mountains and tablelands, plains and valleys, on the surface of the country and of their relative heights above the sea-level. Some teachers would consider this a sufficient treatment of this part of the subject, and after the necessary recapitulation would pass on to a new feature, say the river system; and this would probably be the right course to take in teaching children eight or nine years of age. But the class in question would be all the better for being taught to pass beyond an orderly account of the concrete facts; to pass from observing the facts to thinking about them. In other words, a *third* step might be taken, which would require the pupils to institute a comparison between India and other similarly situated countries. For example, they might be led to see that by its natural boundaries

Another type of lesson: Illustration from geography.

India is isolated even more completely than is Italy, the corresponding peninsula of Europe; and they might compare and contrast the passes over the Himalayas with those over the Alps. The *fourth* step, the application, will consist as before in turning to use the knowledge that has been acquired. An immediate application may take the form of drawing a map, or making a model, showing the physical features thus far explained. Further applications will be made in succeeding lessons, when it will be seen that the vertical configuration of the country goes far to determine the direction, length, and general character of the rivers; and that it is also one of the causes that affect the climate of the country.

The above treatment of a geographical topic is typical of a large class of lessons. The same general method is applicable to lessons in history, in literature, and in the concrete sciences, *i.e.*, in those sciences which, like botany and zoology, culminate, not in establishing and applying abstract truths, but in the description and classification of concrete things. Whether a lesson belongs to the one or the other of the two types we have considered, the first two steps and the last will remain the same. It is at the third step that a difference appears. The second step in the kind of lesson just illustrated will usually take the form of a geographical description, a historical narrative, a literary exposition, or the observation of a natural object. The third step will then consist of appropriate comparisons, contrasts, and classifications. The geography of the region dealt with in the second step will be compared with that of another region previously studied; the historical event or personage will similarly be compared with another already familiar; the poem will be compared with the one read last week or last term, and perhaps classified according to its epic, dramatic, or lyrical qualities; the animal or plant that has just been described will be compared with others recently studied or otherwise known, and perhaps referred to its natural order. We must add, however, that only those comparisons and classifications should be introduced which the pupils are *able to make for themselves*. The qualification is a highly important one; for to do the relating work for the pupil is to attempt to think for

him, and the teacher can no more think for the pupil than he can see or hear for him. The more advanced the pupil, the more thorough and suggestive this third step can be made. On the other hand, it may often vanish altogether in the instruction of young children, and the teacher may advantageously be contented with an orderly individual treatment of the topic in question.

We have now illustrated, perhaps with sufficient fulness, our suggestion that the perfect acquisition of a new unit of knowledge normally involves a mental movement through certain definable stages. It will now be convenient to describe in more general terms the meaning and intent of each of these stages.

The first step: Preparation or Introduction.

The general purpose of the first step is to prepare the learner's mind for the new knowledge. It is therefore sometimes technically called the Preparation; but as this term is also used to connote certain work done in out-of-school hours, some would prefer the term Introduction. The introductory step will have fulfilled its purpose when it has drawn forth clearly, definitely, and methodically, that part of the pupil's existing store of ideas which forms the appropriate point of departure; or, in other words, when the right apperceptive system has been brought into clear consciousness. The teacher who plunges abruptly into the new lesson, without a thorough and sufficient revision of the relevant ideas which his pupils already possess, will find himself compelled to go back upon his previous instruction in a confused and unsystematic way. From this mistake a well-considered preparatory stage will save him. The preparation will contain no new knowledge, and it should therefore be mainly the work of the pupil, the teacher's function at this stage being that of guiding the pupil's thoughts by means of suggestive questions. He will, however, leave the pupil to tell what he knows as freely as possible and will require him to express his knowledge in an orderly fashion. He may then give a brief summary in which the apperceiving ideas are properly arranged and recapitulated. In a sense the whole of the pupil's previous work in this department will form the preparation; more strictly, the preparation will be a sifting and re-arranging of the contents of the preceding lesson or two.

One of the commonest mistakes in teaching is that of hurrying over or omitting the preparation, in order that the ground may be covered as quickly as possible. Still, the length of time and the amount of trouble properly expended upon this introductory matter will vary greatly according to several circumstances. The more intimately and logically a lesson is connected with its predecessor, the greater will be the need of a carefully developed preparatory stage. Again, if the teacher knows the class well, and is able to gauge at once the contents of the average pupil's mind with reference to the subject in hand, the preparation may rapidly be disposed of, though even here a mere formal reference to the results of the last lesson is rarely sufficient to meet the requirements of a good preparation. If, on the other hand, the class be comparatively or wholly strange to the teacher, and if, therefore, he has little to guide him except the age of the scholars and their general position in the school, the preparation must be in the nature of careful preliminary questioning, and may require no small degree of skill and resource on his part.[1]

Statement of aim.

Before entering upon the second step of the lesson, that of presenting the new knowledge, the aim of the lesson should, as a rule, be clearly indicated. There should be no "beating about the bush". Both teacher and pupil are supposed to be engaged upon a common pursuit, the pursuit of truth, and the pupil should be at once taken into the teacher's confidence as to the object of investigation. The chief exception to this rule is that of very young children, who have not yet learned to distinguish between work and play, for whom every occupation is in fact a species of play, and as such is not performed with definite aim. Some teachers object to an intimation of the aim early in progress of the lesson, on the ground that the interest that comes of curiosity is evoked when the children are required to divine the subject. This may sometimes be the case; but it should be observed that the interest so engendered affords little

[1] The "practice lessons" given by students in training colleges often involve this difficulty. It should as far as possible be obviated by the plain expedient of giving the student the opportunity of becoming acquainted beforehand with the class he is to teach.

or no help towards the mastery of the lesson, and may be a serious hindrance. The teacher who introduces a lesson on coffee by asking the children what they breakfasted upon, in the hope of eliciting the right guess, is merely dispersing their attention when it ought to be concentrated. Ruskin, in introducing the subject of a cryptically entitled lecture says—"I had even intended to ask your attention for a little while on trust, and (as sometimes one contrives in taking a friend to see a favourite piece of scenery) to hide what I most wanted to show, with such imperfect cunning as I might, until we unexpectedly reached the best point of view by winding paths. But—and as also I have heard it said, by men practised in public address, that hearers are never so much fatigued as by the endeavour to follow a speaker who gives them no clue to his purpose—I will take the slight mask off at once."[1] Young teachers have been known to display anything but "imperfect cunning" in disguising the subject of the lesson; but they may well be counselled to imitate Ruskin's example by taking off the mask at once. By this means the pupil will be protected against a dissipation of attention, expectant interest of the right kind will be aroused, and the whole exercise will thereafter bear the stamp of work as distinguished from play.

The indication of aim will sometimes assume the form of a question to which the teacher does not expect an answer, as in the case of our arithmetical illustration. Sometimes, as in our treatment of a geographical topic, it will consist of a brief statement setting forth in simple terms the subject of the new lesson. Here, however, the teacher must be on his guard against deadening interest, either by the words he uses or by his manner of using them. The teacher who, after a survey of the preceding lesson by way of preparation, solemnly announces his intention of dealing with the First Crusade, and proceeds to write this phrase (perhaps an altogether new one) upon the blackboard, courts a failure. The statement of aim should be quite clear, involving no unknown words or ideas.

In the second step, to which the technical name Presentation

[1] *Sesame and Lilies*, p. 1.

has been given, the teacher proceeds to deal with the new matter. Whether or not an abstract and general truth is ultimately to be arrived at, this step will be confined to the concrete and particular facts. These the teacher will have divided into a series of subsections, each one of which should lead logically on to the next. This requirement, that the smaller sections should be arranged in natural series, has been called the "law of successive clearness". Another point well worth attention is that each individual section of the material should at first have attention concentrated upon it exclusively, and that afterwards it should be reviewed in its connection with what has gone before—that it should be put into its right place in the intellectual scheme of which the lesson consists. This requirement has been called the law of alternate absorption and reflection. Supposing the series of subsections to be represented by *a*, *b*, *c*, and *d*, then *c*, (for example) will be considered, first in itself and simply as *c*, and afterwards as the last member of the series *a*, *b*, *c*. Absorption (or concentration) raises into clearness and distinctness the single idea, *c*; reflection views this idea in its just relationship with others. At one moment the pupil will concentrate his attention upon (let us say) the plateau of the Deccan; at the next he will view this in its relation to the rest of the surface of India. At one moment he will confine his attention to a single historical event, a single stanza of a poem, or a certain type of arithmetical example; at the next he will see the same thing in its relation to the whole of which it forms a part. The separation of parts, which has been made for the sake of clearness, must be followed by their combination, since the clearness of the parts is merely contributory to the better understanding of the whole.

The second step: Presentation.

As we have already intimated, the teaching of the more concrete subjects of the curriculum, especially where junior pupils are concerned, must often omit the third step, and content itself with a concise recapitulation of the facts presented in the second step. Some writers appear to regard the latter as legitimately taking the place of those general truths in which lessons on the abstract studies

Third step: Comparison and Formulation.

culminate. But the parallel is a misleading one. An abstract, in the sense of an epitome, is not the same thing as an abstraction; and it tends to clearer thinking if we frankly admit that the third step is not taken. When, however, the pith of a lesson in history is summed up in a proverb or a maxim, we have what may be more fairly regarded as a partial generalisation of the facts.

In teaching history, literature, geography, botany, and the other subjects which we have styled concrete, the third step will consist in such comparisons and contrasts as the pupils are able to draw for themselves. How far we are able to go in this direction will therefore depend entirely upon what our pupils are able to bear. Two cautions are necessary in regard to this effort at relating the individual facts that have been presented. The first is that the things compared should both be properly known, for it is plainly useless to compare the event or object in question with another of which the pupil is not yet cognisant. Secondly, only those comparisons should be made which are really valuable, in the sense that they cause the pupil to think, and that they subserve some general view of the facts which the pupils may some day be able to take, but for which they are not yet ripe.

In lessons on mathematics, and in some lessons on language and physical science, comparison merges insensibly into generalisation and the formulation of a rule or principle. This rule or principle, after it has been brought out by means of skilfully directed questions, and has also been clearly and definitely expressed in words, should find its place in the system of general truths to which it belongs.

Fourth step: Application.

We have more than once emphasised the view that knowledge is in itself only a sort of half-way house. The only knowledge we recognise as of educational value is that which the pupil can and does put to some sort of use. Hence the profound importance of the last step in the teaching process, the purpose of that step being to train the pupil in the command of his knowledge, and in doing so to associate it with the needs of daily life. The mere acquisition of rules, precepts, principles, definitions, and laws, makes directly for pedantry rather than for healthy mental development, unless this last step

be faithfully taken. When an abstract truth has been established, it must be applied at once to further concrete examples; and when the truths established are not of an abstract nature, they must be otherwise utilised. The application may take a great variety of forms. The pupil may make a map or a model; he may apply the geographical facts he has learned to the description of an imaginary journey; he may solve a problem involving some new feature; he may write an essay; he may conduct a fresh experiment or make a drawing of apparatus; he may make a historical chart; or he may find parallel passages. In short, the plan of exercising the pupil in using his knowledge which has been traditionally confined to mathematical studies must be extended to all.

Lessons whose aim is the acquirement of skill.

In the preceding account of the normal teaching process, we have left out of sight one important class of lessons—those, namely, whose primary aim is the acquisition, not of knowledge, but of some form of manual or other skill. Lessons in reading, writing, speaking (whether in English or in a foreign language), practical music, drawing, modelling and other manual employments, gymnastic exercises, all come under this head. It is true, of course, that these pursuits involve the communication of a certain amount of knowledge; but the knowledge acquired is regarded as purely ancillary, the final aim being the acquirement of skill. It is true also that in those studies whose final aim is the acquirement of knowledge, we do not regard the process as complete until the pupil has turned his knowledge to some practical account. But the application is made, as we have seen above, only in order that the knowledge may be fixed and made more completely available, whereas in the case before us the whole purpose of the instruction is that some form of bodily skill shall be readily and accurately practised. We have, then, ample reason for making a supplementary study of the method appropriate to lessons in the "dexterities" cultivated in the schoolroom. Some writers, carried away by a desire for philosophical unity, endeavour to make out that the same stages are discernible in every good lesson, whether the subject be the exposition of a poem or the

trimming of a bonnet. But practice must not thus be squared to theory.[1]

Illustration (*a*) from the teaching of writing.

As before we shall find it best to feel our way to a general idea of the method to be employed in lessons on manual and other dexterities by considering a few illustrative examples. Let us suppose, then, that a class of small children, having been led to observe and describe some common object, and having perhaps made a drawing of it, are now about to write down upon paper some short statement about the object. The *first* step, the preparation, as we may still call it, is contained in what has gone before, and so the teacher proceeds directly to a statement of aim. "We have drawn the object, and talked about it with our tongues; let us now talk about it with our pencils." It will be observed that the teacher's real aim is here disguised. When the children are a little older they will understand that good handwriting is in itself a thing worth striving for; but interest in handwriting for its own sake must needs be an acquired interest, and must therefore come later.[2] Meantime the teacher will do well to give direction to the pupil's efforts by appealing to his spontaneous interest in the object he has been examining. The *second* stage, which we may again call the presentation, will fall into two readily distinguishable parts. The teacher will first provide a model, both of the product and of the mode of production, by writing on the blackboard a letter or word or sentence, according to the degree of skill already attained by the pupils; and she will then require them to imitate the copy as faithfully as they are able. Many mistakes may be made, and so it may be the more necessary to include, as a *third* step, a reference to the provisional Rules by which the children's first attempts are to be guided. The teacher may ask, for example, which letters extend above and below the double lines, and which of them should just touch the upper and lower lines; and she may find it necessary to correct the bodily

[1] This point has been more clearly brought out and more fully dealt with by Prof. Findlay than by any previous writer, so far as I am aware. See his *Principles of Class Teaching*, chaps. xiv. and xv.

[2] *Cf.* James, *Talks to Teachers on Psychology*, chap. x.

posture of various pupils. These rules having been insisted upon, there will follow a *fourth* and final step, that of Practice, or continuous effort at close imitation.

(*b*) From vocal music.

Our next example shall be taken from the teaching of vocal music. We will suppose that a class of children nine or ten years of age, who are receiving concurrent instruction either in the sol-fa or in the movable-doh system, are about to learn a new song. They are not yet sufficiently advanced in the knowledge and practice of musical notation to be able to "read" the music fluently and correctly at sight, and the teacher will prefer that they should learn it by imitation rather than grope their way through the notes, making mistakes which are difficult to unlearn. The verses should have been read, understood and appreciated beforehand, and the *first* step, or preparation, will be to recall them either from the book or from memory. If the verses are as pretty and interesting as they ought to be, then the teacher's statement of aim, that they are now to be sung, will be received with delight by the children. The teacher will now perhaps sing the song right through, so as to give additional definiteness to the aim of the lesson. The imitative exercises which are to follow (and indeed all the paraphernalia of time and tune exercises, ear exercises, and so forth, by which the music teacher necessarily sets great store) are tedious and unmeaning in themselves, and must be made significant by being brought into connection with the more interesting aim. The *second* step, of which, as in the writing lesson, observation and imitation are the central features, will now be taken. The teacher will ask the children to imitate his pattern as bit by bit he sings the tune while pointing on the modulator; this will be done two or three times if necessary. He will then ask them similarly to imitate him as he sings longer phrases, and afterwards whole musical lines. The class will then endeavour to sing the tune through, and each mistake will again be made the subject of an imitative exercise. The modulator is then put aside, and the pupils sing from the written or printed copy. Lastly, the words are fitted to the tune, again with the help of the teacher's pattern. A *third* step may now intervene, in which such general aspects of the exercise as the children can

understand are selected for definite treatment. The time and accent may be examined; the mental effects produced by the notes of the melody may perhaps be shown to be appropriate to the words, and the reasons for the marks of expression may be discussed. Thereafter, as a *fourth* step, the whole song must be practised until it is well known, and is added to the pupil's abiding sources of healthful pleasure.

General results as to lessons which aim at skill.

We may now gather up and express generally the results to which we appear to be led by a consideration of specific lessons whose aim is to enable the pupil to acquire some sort of skill. The *first* step, the preparation or introduction, stands as before. It is no less true of acquiring dexterity than of acquiring knowledge that we must have something to build upon. For "our power of imitating the activity of another is strictly proportioned to our pre-existing power of performing the same general kind of action independently. . . . Imitation may develop and improve a power which already exists, but it cannot create it. Consider the child beginning for the first time to write in a copy-book. He learns by imitation; but it is only because he has already some rudimentary ability to make such simple figures as pothooks that the imitative process can get a start."[1] And when the start has thus been made, the skill attained in to-day's lesson will form the basis of to-morrow's. In one sense the preparation for any new section of the subject-matter will of course be constituted by the whole course of the preceding instruction; but, more immediately, it will consist in a revision of the knowledge gained, and a little practice in the skill acquired, in the last few lessons.

The *second* step may again be called the presentation; but in this case what is "presented" by the teacher is not so much new items of knowledge as new forms of skill. As in the other types of lesson, the new material will be divided into a number of smaller sections, which should be arranged so that each will help towards the mastery of the next. In teaching each of these minor sections—whether it be the writing of a word, the singing of a

[1] Stout, *Manual of Psychology*, p. 274.

musical phrase, the drawing of a line, or the rendering of an idea in a foreign tongue—there will always be two distinguishable processes at work; first, observation, and then imitation, of the model supplied by the teacher. We need to encourage the pupil in careful observation and faithful imitation. "At the outset, his pothooks are very unlike the model set before him. Gradually he improves; increased power of independent production gives step by step increased power of imitation."[1] We lay the stress upon the imitative process, because this is the essential factor in the learning of any art. In acquiring a mechanical art, such as that of writing or plain needlework, imitation counts for almost everything, there being at best only a trifling margin left for the play of originality. With reference to the fine arts, vocal and instrumental music, drawing, painting, and the like, the case is manifestly different for the advanced pupil, but not for the young learner. The latter is still primarily an imitator.

The *third* step in the illustrative examples worked out above, the formulation of the rules of the art, needs careful and delicate treatment. An art in which the mechanical element prevails, such as the art of writing or of pronunciation, is readily susceptible of being brought under rules. But the practice of a fine art, at least after the earlier imitative stages are passed, leaves much to the learner's initiative, and here rules may easily become mischievous, because they tend, when they are consciously followed, to render the practice of the art "wooden"—to reduce a fine art to the position of a mechanical one. There is a sense in which rules are the death of true art. He who attempts to sing a song, to recite a poem, to write an essay, to paint a picture, or, we may add, to teach a class, by conscious fidelity to rules, is on the high road to failure, *unless he has not yet passed his novitiate.* In the early stages of acquiring any art, rules have their place and their value, provided they grow naturally out of practice, and are formulated by the pupil himself. But the time should come when

[1] Stout, *loc. cit.* We may, of course, sit at the psychologist's feet for the sake of his psychology, without committing ourselves to his implied copy-book-and-pothook plan of teaching a child to write.

the artist has thrown away these temporarily useful crutches, and it is therefore advisable, even whilst he is yet *in statu pupillari*, to follow the law of parsimony in the employment of rules.

The *fourth* stage, that of practice, is usually a long one, because it must issue in carrying to the point of precise and settled habit the movements which have been practised, tentatively and perhaps laboriously, in the second step. Here again we must distinguish between the mechanical and the fine arts. Mere mechanical dexterity, whether in the writing of words or in the sawing of wood, calls for little else than pure imitation, since there is little room here for individuality. The learner's best course is slavishly to follow a good model, and he continues this process "until he approaches too closely the limits of his capacity in this direction to make any further progress of an appreciable kind".[1] The same thing may be true of him who essays to practise one of the liberal arts; it is true, for instance, of the strummer on the pianoforte, of the unimaginative painter, and of the stilted elocutionist. But this should not be so. In the practice of the fine arts, imitation should be freer and more spontaneous, if true progress is ever to be made.

The value of general rules relating to the teaching process.

We have now considered the three types of methodical treatment which seem to call for separate notice; and it remains to offer a few remarks on a question which was left open at the beginning of the chapter, the question of the value of the general rules which have been the object of our quest. What we have just said about the rules of an art applies here as much as anywhere. The young teacher cannot be too earnestly warned that for him the great thing is to appropriate the spirit of the "formal steps" of the teaching process, without becoming enslaved to their letter. And how much does this mean? It means that, though all the steps are not necessarily gone through in the treatment of any one section or method-whole, yet the *order* in which the steps occur cannot be departed from without disadvantage. That the acquisition of knowledge or of skill is a process of assimilation of new to

[1] Stout, *loc. cit.*

old, that the relevant parts of the pupil's previously acquired stock of ideas should therefore first be recalled, that there should be a progress from the concrete and particular to the abstract and general, that ideas must be possessed before they can be applied, and that application in its turn makes for effective and permanent possession; these are truths as sure as the law of gravitation, because they embody the plain facts of the working of a child's mind. An orator may electrify an adult audience by springing his subject upon them abruptly, leaving them to "collect their thoughts" in preparation for the coming argument or exposition. So an author may suddenly throw at his adult reader a big generalisation, as when Macaulay begins a section of one of his essays by telling us that "as civilisation advances, poetry almost necessarily declines". But these are dangerous experiments to try with the juvenile mind. The adult takes the generalisation temporarily on trust, because he knows that the facts on which it is more or less accurately based will presently be set forth. The child knows no such thing, and your abstract proposition bores rather than charms him. We may feel assured that no good lesson was ever given to children in which the principles underlying the formal steps were seriously violated.

The practical application of the general rules we have been led to formulate will differ at successive stages of the teacher's career. At the outset it is best that he should observe good models, and that he should be guided by common sense in drawing up notes of his own lessons. These notes should be revised by a more experienced teacher, every correction or suggestion being accompanied by a reason for making it. Gradually there will thus dawn upon the beginner the idea that certain principles underlie the act of acquiring knowledge or skill. The time is now ripe for such a study as that pursued in the present chapter, and for some time it may be well to construct notes of lessons in strict accordance with the formal scheme. Like the rules of any other art, however, the rules of the teaching art will not always be overtly employed. As soon as a teacher has thoroughly imbibed their spirit, he may be left quite free to dispense with a formal array of preparation, presentation, and the rest. But though the steps may no longer

be explicitly stated, or even thought of, they will always remain implicit in his best efforts, and he will be wise enough not to despise them because he has learnt to practise his art without conscious need of their help.

REFERENCES

The scheme commonly known as the "formal steps" may be further studied in J. Adams's *Primer of Teaching*, chap. vi.; Lange's *Apperception*, pt. ii., sect. 3; Barnett's *Common Sense in Teaching*, chap. i.; Findlay's *Principles of Class Teaching*, chaps. xii.-xv.; Welton's *Principles of Teaching*, chap. iii.; Adamson's *Practice of Instruction*, pt. i., sect. iv. For a further development see Hayward's *The Lesson of Appreciation*, and *Training in Appreciation*, ed. by N. Catty.

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CHAPTER XII

THE DEVICES OF TEACHING

"The teacher's part in the process of instruction is that of guide, director, or superintendent of the operations by which the pupil teaches himself"—JOSEPH PAYNE.

Methods distinguished from devices

WE have already seen reason to employ the term method to denote such an orderly arrangement of the material of instruction as will cause that material to take best effect on the mind of the learner. The term has, however, been used loosely and vaguely by writers on education, both in this country and on the continent, to cover various other aspects of the teaching process. Thus one hears of the questioning or interrogative, the Socratic, the catechetical, the developmental, the expository, the empirical, the inductive, the deductive, the heuristic, and the descriptive methods of teaching. One hears, too, of a phonic method of teaching children to read, of direct and conversational methods of teaching a foreign language, of an observational method of teaching elementary science, of an experimental method of teaching geometry, and of a concentric method of teaching history. We sometimes find even the contrivances used for illustrating lessons spoken of as methods. Now though it may be difficult to maintain perfect consistency in the use of terms, we must at any rate distinguish clearly between the problems of methodical procedure discussed in the last four chapters, and the different modes of presentation, and devices for illustration, employed by the teacher. In so far as any of the adjectives above quoted refers to a question of arrangement,

it may properly be used to qualify the term "method," but not otherwise. Thus we may with propriety speak of a concentric method of teaching history; but to speak of a catechetical or an expository method is not so happy a use of language. The idea underlying such terms as these may be more accurately stated as follows: In the act of instruction, the teacher has to be thinking, not only of method properly so-called, but also of certain external forms or modes which his instruction may from time to time assume, or of certain devices to which he may have occasion to resort. At one point, for instance, it may be best to question the pupils, and to let them do the talking; at another to do most of the talking himself by giving a direct exposition. Among the most important of such expedients we may also place the use of illustrations, of written examinations, of text-books, and of exercise books. These are the points to be dealt with in the present chapter.

Oral Questioning.

The acquisition of a good style of *questioning* may be laid down definitely as one of the essential ambitions of a young teacher. It is too much to say that a good questioner is a good teacher, but it is hardly too much to say that a really unskilful questioner must be on the whole an indifferent teacher, because his want of skill must correspond with want of insight into the child's mental processes. Still, questioning is not, as many seem to have supposed, the whole art of teaching. Its importance is fully insisted upon in most of the current pedagogic handbooks, but its dangers and limitations as a device in teaching have not always received the attention they deserve.

The purposes of questioning as commonly stated.

It is commonly stated that the art of questioning may be employed in at least three different ways, corresponding to successive stages in the progress of a lesson. At the beginning of the lesson the questioning is said to be of an experimental character, the aim of the teacher being to find out what the pupil knows about the subject in hand, so as to prepare the way for what is to come; secondly, in the course of the lesson the aim of the questions is said to be to lead the pupil on from step to step in a course of inference or observation;

whilst thirdly, at the close of the whole lesson, as well as of each principal division, questions are said to be put in order that the teacher may ascertain to what extent the matter has been assimilated, and what are the points which seem to present difficulty or to give rise to misunderstanding. This is a fair statement of the case as it is commonly presented; and on the strength of such directions as these, young teachers frequently conceive of an ideal lesson as one in which the teacher maintains a "brisk fire" of questions from first to last.

"Preliminary" questioning.

It is certainly necessary at the beginning of the lesson to probe the children's knowledge, in order that the new material may find suitable points of attachment to the old. This was emphasised in the last chapter, where the preliminary step was distinctly marked off as the preparation. Now this stage will naturally be in the main the work of the pupil, the teacher's chief concern being to prevent him from wandering from the point. Except so far as is necessary for this purpose, the teacher should at this stage be sparing in the use of questions. Having put a question which sets the pupils on the desired train of thought, he should allow the answer to be as uninterrupted as possible.

"Recapitulatory" questioning

What is true of so-called preliminary questioning is equally true of the last of the three sorts of interrogation noted above, *viz.*, the recapitulatory. It is an excellent practice to pause at certain well-marked stages in the progress of a lesson, and to cause the children to give a short *resumé* of what has been done thus far, and at the end to require a brief summary of the whole.[1] Now here it is important that the pupil should be able, not only to restate the facts and principles which have been explained, but to do this in a logical and orderly fashion. When, however, the recapitulation takes the form of a series of detached answers to the teacher's questions, the latter condition is entirely neglected, the fact being that more than half the work of recapitulation is done by the teacher, who not only suggests bit by bit the pupils' account of what they have been

[1] *Cf.* what was said in chap. xi. about absorption and reflection.

taught, but who does all the work of making that account orderly and concise. The practice here condemned probably accounts in great measure for that atrophy of the power of connected statement which is frequently complained of by examiners as the outcome of school instruction. The best kind of recapitulation is that in which a selected scholar gives a concatenated account of the lesson, his fellows being allowed to correct and supplement his statements. The "brisk fire" of questions does not in this case promote, but rather retards, intellectual activity. It may be necessary to interpolate a question here and there in order to keep the pupil on the right track, but in the main the onus of making the recapitulation an orderly and connected statement should be thrown on the class and not on the teacher. This plan can, of course, be carried out more readily with older than with younger pupils, though even the latter should be encouraged and trained to express themselves in continuous oral statements. To say that they cannot do so because they lack the power of expression is, in part at least, to mistake cause for effect.

Answering in complete sentences.

Some teachers who have seen clearly the evil of requiring from the pupils a mere series of detached answers to the teacher's queries, have proposed as a remedy that answers in complete sentences should be insisted upon. On this we remark that the remedy is designed to cure mischief that can easily be prevented. The best way to avoid a series of scrappy answers is to refrain from putting a series of scrappy questions: prevention is here better than cure. But this proposal is open also to the fatal objection that it tends to make the process of teaching less natural, because less of the character of free and unconstrained communication between teacher and taught. It is surely going very far in the direction of pedantry to say that in reply to the question, "When was the Battle of Hastings fought?" we are not to accept the statement "In 1066," but are to insist upon "The Battle of Hastings was fought in 1066". We may put this aside as an idol of the cave, though at the same time we may fully admit that the complete sentence is a thing to be encouraged in appropriate circumstances.

"Developing" questions.

It is not so much at the beginning or the end as in the course of a lesson, and in particular of a lesson involving a chain of reasoning, that the device of questioning is of paramount importance, and becomes almost sufficient in itself to differentiate the strong from the weak teacher. When, for example, a teacher leads his pupil on from one rule of arithmetic or algebra to another related rule, when he shows the connection between the climate of a country and its productions, or when he seeks to establish a grammatical rule or a scientific law on the basis of a number of instances—in all such cases of inductive or deductive inference, it is the skill of the teacher as a questioner that determines whether the pupils are active agents in the search for truth, or mere passive recipients of the teacher's erudition.

The device of questioning will thus play an important part in the third of the formal steps, that of comparison and (possibly) abstraction; and also in the second step, the presentation, provided the subject lends itself to this kind of treatment. The so-called "developing" presentation, that in which the pupil is led to think out the matter for himself, must consist largely of question and answer. But when the presentation is of the narrative sort, questioning counts for less. Inexperienced teachers sometimes vainly try to elicit some bare historical or geographical fact, which must from the nature of the case be plainly told. There is here, of course, a confusion between a really roundabout way of teaching a fact, which is a mere waste of time, and an apparently roundabout way of establishing a comparison or an inference, which may be the truest economy of time. The pupil cannot evolve facts from his inner consciousness, but that inner consciousness may well enable him to apprehend relations between facts that he knows.

Marks of good questioning.

What now are the essential characteristics of a good question? First and foremost, it should incite the pupil to genuine activity of mind; it should cause him to observe, remember, and think. This is the one important condition of good questioning. But from it there follow at once the obvious corollaries that questions should be so framed that they do not encourage guess work, and that therefore they

should not, generally speaking, admit of being answered by a mere "yes" or "no," or by any other single word, since questions of this kind are precisely those at which pupils are tempted to make "shots". This rule is, however, subject to frequent exceptions. The best of teachers will often put question after question to which he expects only bare assent. He does not stop to think of the rule laid down in books on teaching; and in this he is wise. It is enough that his purpose is adequately served. Next, elliptical questioning should generally be avoided, but is not to be entirely banned. A more important point is that the answer should not be so obvious as to provoke no mental effort. The teacher who, after having produced a terrific explosion of oxygen and hydrogen, asked the boys whether they had heard anything, is an extreme example of what is meant. Common sense also suggests that questions should be well distributed over the class, not confined to a few of its sharpest members; and that the pupils should not as a rule know beforehand who is to answer the question. Various other rules are sometimes enumerated. Thus we are told that a question should be correctly expressed, that it should be neatly and tersely worded, that it should be clear and comprehensible, that it should be definite, not ambiguous, and that it should be asked in a pleasing manner! All these things are true enough, but they are no more true of a teacher's questions than of anything else that he has to say. Such an elaborate array of rules hardly seems necessary, except in so far as the faults corresponding to them are commoner in asking questions than in making statements. It cannot be too strongly insisted upon that the one golden rule of questioning is: make your pupils observe and think. The writer lays stress upon this, because he has heard many a good lesson severely criticised on the ground that the teacher happened to have offended against one or more of the above rules, though the general tendency of his questions was to stimulate interest and thought.

Answers.

Hardly less important than the way of asking a question is the mode of dealing with the answer. An answer may be quite right, or it may be absolutely wrong, or it may contain a mixture of truth and error. Answers which are quite

right will, of course, present no difficulty to the teacher, whilst hopeless or soulless blunders should be of rare occurrence. For the child who defined the equator as a menagerie lion going round the world, we can do nothing but assume profound ignorance and start afresh. It is in dealing with the commoner case of the answer which contains part of the truth mingled with error that the young teacher frequently fails, and that the resourcefulness of the more experienced is often severely taxed. To the teacher of nimble wit and of quick sympathy with a child's ways of thinking, an answer of this kind is generally an instructive, and sometimes a startling, revelation of those misconceptions which arise from lapses of attention or memory on the part of the pupil, or from faulty explanation on his own part, or perhaps from obscurities in the language of the text-book. The bare rejection of such an answer without comment is clearly an inadequate mode of treatment. The child who defines the equator simply as an imaginary line drawn round the world should be led by means of a series of questions to see that his definition needs amendment. It is just here that the value of so-called Socratic questioning becomes undoubtedly great. It is true that the parallel between the dialectic of Socrates and the school teacher's questions has often been over-stated. The aim of that philosopher, as he is reported in Plato's dialogues, was generally to convict his interlocutors of intellectual shallowness, and of uncritical acceptance of current opinion; and he appears to have derived peculiar satisfaction from first causing his victims to contradict themselves and then leaving them in the lurch—a very different aim from that of the teacher. Notwithstanding this difference, however, the easier dialogues of Plato certainly form excellent reading for the teacher who aspires to skill in the art of questioning.

The preceding remarks are intended to apply only to mistakes made in good faith. The teacher will of course be shrewd enough to distinguish the honest blunder from the careless guess, or from artful evasion of the point. How he will deal with the latter is an affair of government rather than of instruction. So, too, is the habit sometimes formed of bestowing lavish praise upon answers which evince no special merit.

Reference has already been made to the limitations of questioning as a device employed in oral teaching. There seems little reason for doubt that in our text-books on pedagogy, and in the practice of our primary schools, the interrogatory and catechetical forms of instruction have been overdone and misapplied. In places of higher education, on the other hand, the opposite tendency has probably prevailed of relying too exclusively upon the continuous lecture. No inconsiderable part of teaching skill consists in the right mingling of these two forms of instruction. In mathematical, scientific, and grammatical instruction, where any one step in the lesson is logically connected with the next, furnishing its ground or reason, a skilful teacher will tell little and elicit much. But in literature, history, and descriptive geography, and in all lessons which consist of orderly narrative or description rather than of a chain of inferences, the device of questioning, though it still is of great importance, is more limited in its application. The efforts of young teachers are often marked by two opposite faults—that of lecturing and telling when they ought to be questioning, and that of questioning upon matters of fact of which the children are *ex hypothesi* ignorant, and which it is the teacher's business to make clear. In the latter case the lesson is conducted as if it were a revision exercise, instead of the occasion of teaching something new. The fact is that the power to describe clearly, to narrate vividly, to tell a story well, is quite as necessary in teaching as is skill in questioning. Redundant questions are often, indeed, merely the cloak that hides the teacher's weakness as a *raconteur*. To say this is not, of course, to advocate garrulity. There are many lessons in which the pupils should do most of the talking, and none in which they should do the whole of the listening. The point here insisted upon is that effective teaching often depends in great measure upon the possession of the faculty of clear and graphic exposition. Since individuals differ very markedly in the degree to which they possess this power, young teachers often need a great deal of self-culture in the direction here indicated. The points of a narrative should be made in an orderly fashion, such expressions as "Oh, I forgot to tell you so-and-so" being rarely used; the

EXPOSITION.

essential points should receive proper stress, and should perhaps be noted on the blackboard; the teacher's language should be within his pupil's comprehension, and his voice and manner should add to his effectiveness. Not every one has the gift to become an excellent story-teller; but any one who is otherwise fit to be a teacher can acquire the power sufficiently well, with adequate attention to these simple matters. Especially important is vocal culture. Slovenly articulation, a voice pitched too high or too low, and that muffling of the voice which comes of defective action of the lips, tongue, and soft palate, should all be met by a system of appropriate exercises.[1]

WRITTEN EXAMINATIONS.

With *examinations* regarded as a public guarantee of the efficiency of a school we shall deal in a separate chapter. We are here concerned with them only as one of the modes or devices employed by the teacher, apart from the requirements of any public authority, for promoting the ends of instruction. Ordinary class examinations are plainly free from most of the objections that have been alleged against those conducted by external examiners. They are simply a somewhat more formal and a more individually searching mode of questioning, and most of what has been said concerning oral questioning applies with equal force to the teacher's own written examinations.

When of greatest utility.

It is proper to add, however, a few additional words of advice concerning these class examinations. First, they would seem to serve their purpose best when the formalities that usually surround an examination are reduced to the smallest possible limits; and to this end they are probably most effective when no previous notice is given of their occurrence, and when they are regarded simply as an exercise in the clear setting forth on paper of what the pupil may fairly be expected to know of the subject. Secondly, provided examinations are understood in this sense, there seems no good reason why they should not occur frequently; but when they are made a special departure from the usual routine, and especially when the competitive spirit is keenly awakened, they should be comparatively rare. Thirdly,

[1] See Burrell's *Clear Speaking and Good Reading*, Browne and Behnke's *Voice, Song, and Speech*, etc.

since the teacher knows the ground that has been traversed, and the presumable acquirements of the average pupil, he need not, in framing the paper, allow so wide a choice of questions as is usually allowed in public examinations; though he will make sure that pupils of different capacity and varying interests will, unless they have been lazy, all have something appropriate to do. Lastly, it is usually a bad plan to compose an examination paper at a single sitting. Unless the teacher has an excellent memory, a paper so put together is apt to omit or to slur over some of the most interesting and important portions of the course of instruction, and to place the stress on points whose chief recommendation is that they are readily thrown into the form of a question. Moreover, the questions are apt to be of a humdrum character, not at all reflecting the best qualities of the teaching. Experienced examiners agree that the best questions are those that suggest themselves in the course of actual teaching, since these are likelier to turn upon the right matters, and to form a real instrument of training.

(Under wise management ordinary class examinations are a powerful means of intellectual stimulus, especially because they provide the right kind of opportunity for the pupil to apply the knowledge he has gained.) An examination may often form a fitting mode of accomplishing the last of the "formal steps," especially when the questions demand something more than a mere reproduction of what has been taught.

WRITTEN EXERCISES.

From the time when the pupil is able to express himself with fair facility on paper, *i.e.*, in the upper classes of the primary and in all the classes of the secondary school, *written exercises* are an important feature of school work. Like class examinations, they may in general be regarded as corresponding to the "application" stage of the treatment of a topic of instruction. The extent to which they are required will, however, vary with the subject and with the age of the pupil. They must, for example, form a more constant element in the teaching of mathematics than in the teaching of history; and they will be more freely employed with older than with younger pupils. The written exercise is often anything but a true test of the degree to

which a lesson has been understood and assimilated by a child of eleven or twelve, because many of his blunders and omissions are probably due not so much to ignorance or confusion as to want of skill in expressing himself in writing.

Correction of exercises.

The correction of written exercises is one of those details of procedure which, at least in large schools, call for careful consideration, though the solution of the difficulty depends upon common sense rather than upon any deep-seated principles. The minute revision of piles of exercise books is an exhausting process, both physically and mentally, and we ought to make sure that only so much of this kind of work is done as will certainly yield a profitable return. Even when the teacher is reasonably sure that his pupils will attend with sedulous care to his corrections, the advantage is purchased at too great a cost when mechanical labour brings him jaded and weary to the business of actual teaching. But in the case of young pupils we may be pretty sure that much, if not the whole, of his labour will be thrown away. There is a certain prodigality of conscientiousness in marking with red ink every mistake a child has made, whether or not the teacher is duly repaid for the trouble. Moreover, with reference at least to one common class of mistakes—lapses in spelling—the value of this negative sort of teaching may well be doubted. The true remedy for bad spelling lies rather in those exercises which impress positively the right form of the word, *e.g.*, exercises in reading and transcription.

Still, a considerable amount of correction will be necessary. On the whole question it may be suggested that no correction is so useful and effective as that which is made by the blunderer himself, and he should, therefore, in the first instance be required to mark his own mistakes. Some teachers again adopt a mutual plan of correction with satisfactory results. By means such as these, altered and adapted to meet special circumstances, the subsequent labours of the teacher may be substantially lightened.

Marking.

The last two topics, examinations and exercises, lead us naturally to a brief consideration of *marking*—a subject which has a real fascination for teachers who love perfection of routine. In some schools, elaborate systems of numerical

marks for daily exercises are the rule. The teacher who can afford to dispense with aids of this kind should surely do so, since they tend to reduce the school to the position of a mark-granting machine, they add to the nervous wear and tear of the teacher's life, and they tend to make the association of reward with merit far too constant, detailed, and obtrusive. An important exception, however, is that of young children, especially when they are engaged upon such mechanical pursuits as writing and calculating; for in cases like these, where any interest that may be evoked must be chiefly of the adventitious sort, the giving of marks may act as an effective and a harmless spur to industry. But as a rule, such expedients as the exhibition on the walls of the class-room of exercises of exceptional merit would seem to answer most of the purposes of laborious systems of marking, and are far less objectionable.[1]

Examinations are on a different footing. Classification by marks is here a plain necessity imposed upon every teacher. A variety of interesting points arise for discussion, but so much depends upon the particular subject of examination, the style of question, and the personal preferences of examiners, that a general treatment would be difficult. (Is it best to fix a maximum, and then to deduct marks for all mistakes? Or to subdivide the questions into smaller ones, and then to give marks for everything that is right? Or to mark by general impression? Or to combine the first or second of these plans with the last?) To these questions no general reply can be given. Again, to what degree of accuracy can we properly pretend in classifying candidates? The common assumption is that if there are thirty candidates we may distinguish twenty or thirty degrees of merit. Something like this may sometimes be possible in mathematical subjects, but to judge literary and descriptive work with such nicety may safely be set down as mere pretence. No such accuracy is in

[1] Of course opinions differ on points like these. Mr. Eve, for example, whilst acknowledging the force of Dr. Wiese's criticism of the English system (in *German Letters on English Education*), appears to regard " thinking in numbers " as a not insalutary habit for teachers to form. See his essay " On Marking " in *The Practice of Education* (Pitt Press Series).

fact attainable. It is probably correct enough to say that in a large examination "we can readily distinguish four or five degrees of merit in the candidates; few examiners can certainly recognise ten, and it is ludicrous to profess that we can distinguish a hundred."[1]

NOTE-BOOKS.

The art of *note-taking*, implying as it does the ability to analyse the matter in hand, and to discriminate its essential features, is as difficult as it is important. It requires a good deal of training and practice, and must therefore be taken in carefully graduated stages. From the time when the pupil is able to write and spell decently, note-books will be necessary for certain subjects, *e.g.*, for language and history, but for several years their contents can scarcely be of his own excogitation. He should be allowed to suggest an appropriate entry, but the teacher will have to put it into shape, and to make a definite pause while the entry is being made. Sometimes the best notes that can be made will consist of a series of pointed questions, to be answered either orally or in writing, and serving to recall the salient facts of the lesson. As time goes on, the onus of making good notes should rest more and more upon the pupil, until in the last years of the secondary school period he should have acquired considerable facility in making abstracts, not only of lectures and lessons, but also of standard works in his special departments of study.

The contents of the note-book will vary according to the subject and the character of the accompanying text-book. In the early teaching of a foreign language, for example, the note-book will contain summaries of grammar and vocabulary; in mathematics, formulæ and definitions; in history, a text-book will perhaps supply a systematic outline in addition to a more detailed treatment, and the note-book will then be reserved for further information on leading events.

TEXT-BOOKS.

The right use of *text-books* is a point of great practical importance in the art of teaching. In the old days, when the master sat at his desk and called up individual pupils to "say their lessons," the text-book was of course the chief instrument of instruction; but now that children are taught

[1] Prof. Miall in *Teaching and Organisation*, p. 259.

collectively in groups, the oral lesson is more commonly relied upon, and has to a great extent superseded the text-book. Some hold that the change has gone too far, and it has been sarcastically remarked that whereas in former days the pupils learned their lesson and said it to the teacher, the teacher now learns the lesson and says it to the pupils. The danger here hinted at is undoubtedly a real one. It ought, in fact, to be clearly recognised that text-books should play a varying part in teaching, according to the age of the pupils and the nature of the subject. Until a child is able to read fluently, he will make small use of text-books, except an easy "reader," and perhaps a plain collection of arithmetical exercises; and so in the lower divisions of a primary school instruction will be carried on almost entirely by means of oral lessons. In the higher classes of the primary, and throughout the middle forms of the secondary, school, pupils should begin to learn the use of books, though at this stage the text-book must be regarded as strictly subordinate and supplementary to the teacher's lessons. In the higher forms, when the pupil is passing into the student stage, oral instruction will ordinarily be largely replaced by the study of books, and the teacher's task will be more than ever limited to stimulus and guidance—a fact which should have a close bearing upon the structure of advanced, as compared with elementary, text-books. When at length, if at all, the university stage is reached, the opinion has been deliberately expressed that, at least as regards the abler students of certain subjects, oral instruction of a formal character may well be dispensed with.[1]

Qualities of a good text-book.

Certain plain requirements in a good school-book may be quickly stated. It should be clearly printed, in type of suitable size, on good paper; it should be strongly bound; its statements should at least be accurate; its language should be easily comprehensible to the pupil; and if illustrations are given, they should do what they profess to do—throw light on the text. How grievously these more obvious requirements are sometimes disregarded, those only know whose lot it is to examine school-books with special care. Whether a text-book is best

[1] *Cf.* the late Prof. Sidgwick's "Lecture against Lecturing," in *The New Review*, 1890.

written by a first-rate authority on the subject or compiled by an experienced teacher from authoritative sources, is a question upon which no general rule can properly be laid down. When the same person combines in himself mastery of the subject with skill in expounding it to a beginner, as in the case of the late Prof. Huxley, his book is sure to win its way to wide acceptance.

But the teacher of a lower or middle form, though he will hesitate to adopt a mere compilation from second-rate sources, will look chiefly to the practical utility of a book as a supplement to his oral teaching; indeed it is upon this point that the less obvious qualities of a suitable text-book will turn. Prefatorial remarks, hints on the teaching of the subject, and all other matter intended only for the teacher, should appear in the publisher's ircular or leaflet rather than in the book itself. Furthermore, a ook intended for class use will differ to an important degree from one meant for private students; the minute explanations and tabulated summaries supposed to be proper to the latter will find no place in the former. Again, though the teacher may in choosing a book be compelled to take into account its suitability for a certain examination, this fact should not be obtruded on the notice of the pupil. Our "Oxford and Cambridge" geographies, "Certificate" histories, "South Kensington" algebras, and "Marticulation" science books furnish food for some sad reflections on our educational machinery.

A complete review of the features of a good text-book in each of the usual branches of instruction would be out of place here, partly because it would take us again over ground already traversed, and partly because it would raise questions too specialised to be competently dealt with by any one writer; a few instances must suffice. A good teacher of younger scholars will usually select that text-book of *arithmetic* or *algebra* which consists simply of a copious, varied, and systematic series of exercises. He will prefer that all explanatory and demonstrative matter should form the subject of oral lessons; he will help his pupils to make their own summaries of facts and principles, and he will resent any division into "lessons" as an unwarrantable intrusion upon the individual ...er's province. The exercises should be sufficient not only

for a first course, but also for subsequent revision; the book will not be worked straight through, as if it were a story book, but the teacher will pick out such examples as will best serve his purpose at the time. In short, the book will be the teacher's servant, not his master. The choice of a text-book in *geometry* will, of course, depend, in the first instance, upon the teacher's special views as to the content and sequence of the course; but he will in any case require that the figures be bold and well drawn, that the steps of the proofs be clearly arranged, and that due limits be placed upon abbreviations of geometrical language. Here again he will be satisfied with the usual systematic arrangement. Though he will not require all the axioms and definitions to be swallowed at the outset, he will not object to their being neatly brought together, to be referred to as occasion arises. The one indispensable text-book of *geography* is, for beginners, a collection of pictures, and, for older pupils, a collection of diagrams and maps, which should not be crowded with unnecessary names, and should be printed with merciful regard to the scholar's eyesight. The ordinary class-books of geography contain a large amount of matter which can and should be gathered from the map, and their utility may well be doubted. Similarly, the best supplement to a course of lessons in *history* is a "skeleton outline" of the chief events, chronologically arranged, and so forming a temporal scheme which shall aid the memory and be at hand for reference. For the rest, the teacher of geography and history will prefer to rely on his own powers of description and narration, and on the contents of the school library. In the teaching of *natural science* books will play a still less important part. A brief summary of facts and principles such as might be given in the form of notes, is the utmost that is needed; unless the subject demands the solution of numerical problems, in which case a collection of these may be useful. After what was said in Chapter VII. about the scope of instruction in English and in foreign languages, we need not here enter at length into the question of suitable text-books. It need only be remarked that a school grammar should make the essentials absolutely clear, and relegate all exceptional formations and constructions to appendices and foot-notes; and that the

use of a vocabulary is a convenient stepping-stone to that of a dictionary.

SCHOOL LIBRARIES.

The subject of text-books suggests the wider one of *school libraries*. A hopeful sign of the times is that the importance, nay, the necessity, of libraries for schools of all grades, is more fully understood now than ever before. The day has gone by when a single reading-book, consisting of a series of "elegant extracts," all perhaps excellent in their way, but possessing no unity and therefore little formative value, was deemed a sufficient literary equipment for a child. It is now generally understood that the mere ability to read, without a trained discernment of what is best worth reading, is a doubtful boon, and that, therefore, a library is an essential part of the equipment of every school. Such a library should contain at least six departments—stories and fiction, history, biography, travel, popular science, and poetry—and in each department the needs of pupils of different ages should be cared for. There should also be a collection of useful books of reference, at least a few good dictionaries and a large atlas, which the older scholars should be trained to use for themselves. A significant distinction may be drawn between a school and a class or form library. The latter should contain books that are more strictly supplementary to the course of instruction and the ordinary text-books—some alternative text-books for reference, a handy dictionary, and such books of travel, biography, and fiction as will enable an intelligent pupil to correlate his recreative reading with his school lessons.

ILLUSTRATION.

The term *illustration* is commonly applied to the pictures and drawings with which books are embellished; and to the employment of examples, comparisons, and analogous instances in elucidating an argument or enlivening a narrative. Amongst teachers, however, the word appears to have acquired an extended significance, and is made to include such things as geological specimens, chemical and physical apparatus, blackboard drawings—in short anything which, by means of an appeal to the senses or imagination of the learner, throws light upon a piece of description or reasoning. It is in this wider sense that we shall here use the word.

The various kinds of illustration may be arranged in a sort of series, according as they leave much or little to the imagination. They are, first, the actual objects, which leave nothing; secondly, models or solid representations of objects, which leave something; thirdly, pictorial or photographic representations, which leave more; fourthly, outline drawings and diagrams, which leave still more; and fifthly, verbal comparisons, which leave everything, to the pupil's imagination.

Kinds.

The relative importance of these will vary according to the subject, and the pupil's stage of development. In some lessons, notably those on common objects and on elementary science, the actual thing must usually, from the nature of the case, be forthcoming, because one essential purpose of the exercise is to train the pupil to observe the object carefully, and to describe accurately what he observes. Geography and history, so far as they are taught by means of school excursions, are illustrated in the same way; but in the main the teacher has here to rely upon models, pictures, maps and diagrams as aids to the child's imagination.

Their uses in different subjects,

Apart from particular subjects, however, direct appeals to the senses are on the whole more frequent in the earlier than in the later stages of education. In the infant school or Kindergarten stage, there are few lessons that can be rightly taught without resort to things which can be seen and handled; in the primary and lower secondary stages, concrete illustrations are still of vital importance, though increasing demands have now to be made on the pupil's imaginative and conceptive powers; beyond this period they are of still less importance, or rather they are still less available, because excursions are now made into regions where they are of small assistance, such as reflective poetry, constitutional history, and the like. Still, they should be used as much as possible at all stages and in all subjects. There are few students of abstract matters who would not be willing to confess that a relevant appeal to the eye always comes as a welcome relief.[1]

and at various stages.

[1] Modern text-books of psychology are a case in point; see James's *Principles*, Baldwin's *Handbook*, etc.

Like most other good things, illustration may be over-done. There has been a tendency, especially in our training colleges for teachers, to exalt what is essentially a means to the position of an end, a tendency doubtless encouraged by the mode of examination in practical teaching that has prevailed. Though the ability to illustrate appositely and readily is one of the marks of a good teacher, yet it cannot be too strongly emphasised that a highly finished and elaborated diagram, picture, or model, is quite insufficient in itself to make a lesson a good one. Speaking generally, the utmost simplicity should be aimed at, and those illustrations which are so simple that they can be made or worked out in the presence of the class are best of all. The map that grows before the children's eyes as the lesson proceeds, and the sand or clay model that is moulded in the presence of the class, as feature after feature of the object is disclosed, are far more effective than the most ornate production presented at the outset in its complete form. And in higher instruction a piece of home-made physical or chemical apparatus is often far more really illustrative than elaborate appratus can be.

Warning as to over-elaboration

The young teacher may be warned also that the number of illustrations should be kept within due limits. Experience shows that in teaching children, counsel may be darkened by a multitude of things, not less than by a multitude of words. Let the illustrations be strictly relevant, and let those only be included which can be properly used in the time at the teacher's disposal.

and profusion.

It not infrequently happens that though the above conditions are fulfilled, the effort is a partial failure on account of the clumsy way in which the illustrations are used. It is rarely wise to hold an object in one's hand, since either one's movements are impeded, or the object is badly shown; a table whose top can be raised or lowered at need is useful for the purpose. Again, it is a bad plan to lay out a number of objects before a class of children at the beginning of the lesson. A professor lecturing before an adult audience may perhaps have all his materials laid out in order on the demonstration table, but the attention of a younger audience is apt to be

Illustrations to be properly exhibited.

seriously distracted at critical moments by an array of specimens or apparatus.

It is for a similar reason that blackboard drawings, sketches, and maps are superior to finished productions, at least in the early lessons. A child's attention easily wanders, and a teacher who puts before his class a gaily-coloured and well-filled map is never sure that all are attending to the part or aspect with which he is dealing at the moment. If, however, he starts with a blank map, and fills in the details as the lesson proceeds, he makes pretty sure of attention to the thing in hand, and to that only. Every young teacher should be at pains to acquire at least a fair degree of facility in sketching and writing on the blackboard.

The blackboard.

Just as the literary part of instruction is furthered by the school library, so is the scientific part helped by the *school museum*. The distinction is not, of course, a sharp one, since the library will contain scientific books, and the museum may contain aids to the study of history and literature. The great thing to be avoided in the formation of a museum is making it a mere dumping-ground for such miscellaneous odds and ends as any one interested in the school may care to contribute. Many such articles are more suitably stored in cupboards, and some more appropriately consigned to the dust-heap, than exhibited in museum cases. The museum should contain, above all else, illustrations of the fauna and flora, the geography and geology, the industries and the history, of the district in which the school is situated. If the museum is to serve any useful purpose, and to contribute to the intellectual life of the school, the specimens it contains should not be thrown together anyhow, as is too often the case, but should be duly classified and labelled.

School Museums.

REFERENCES

The topics included in this chapter are treated *passim* in most of the standard general books on pedagogy. See, for example, Adams' *Primer on Teaching*, chaps. vii.-ix.; Findlay's *Principles of Class Teaching*, chap. xvi.; see also Adams' *Exposition and Illustration*, and Green and Birchenough's *Primer of Teaching Practice*.

CHAPTER XIII

THE INFLUENCE OF PUBLIC EXAMINATIONS ON TEACHING

"And one cried, 'Can you show me how to extract this square root?'

"And another, 'Can you tell me the distance between *a* Lyrae and *β* Camelopardis?'

"And another, 'What is the latitude and longitude of Snooksville, in Noman's County, Oregon, U.S.?'

"And another, 'What was the name of Mutius Scaevola's thirteenth cousin's grandmother's maid's cat?'

"And another, 'How long would it take a school-inspector of average activity to tumble head over heels from London to York?' . . .

"'And what good on earth will it do you if I did tell you?' quoth Tom.

"Well, they didn't know that: all they knew was the Examiner was coming"—C. KINGSLEY (*The Water Babies*).

A DISTINCTION was drawn in the preceding chapter between examinations conducted by teachers as one of the ordinary means, occurring perhaps almost daily, of promoting the ends of sound instruction, and examinations conducted on special occasions and at considerable intervals by an outside authority. The former have already been considered; it is with the latter alone that we are here concerned. Public examinations are conducted, not only under the direct authority of the State, but also by various other bodies to which State authorisation has been directly or indirectly given. It will be convenient, however, to neglect this distinction for the present, and to fix our attention upon the general features of the system of public examinations, under whatever auspices they may be conducted.

The rise and spread of the examination system form an interesting chapter in the history of English education. Examinations as we know them grew gradually out of the older plan of "disputations," a practice of the mediæval universities, which has

maintained its ground to this day in some Continental countries. The change from disputations to examinations proceeded slowly in England during the eighteenth century, and, so far as the University of Cambridge is concerned, the transition has been clearly traced by Dr. Whewell[1] and others. Early in the nineteenth century, owing partly to the extension of analytic methods by the French mathematicians, the processes and results of which are difficult to express orally, the disputations in the schools at Cambridge became less intelligible and interesting, and thus an increased importance was gradually attached to the paper examinations. Indications of this tendency are seen in a Grace of 1808, and in another of 1818; but the great change did not come about until 1827, when a syndicate was appointed to frame new regulations. One of the changes thus brought about was the substitution of printed questions for those hitherto proposed *vivâ voce*, in order, as it was thought, that the questions might be more generally known, the students better directed in their reading and the studies of the university made more fixed and definite. The system, as applied to the granting of degrees, was adopted at Oxford several years later, at about the same time that the University of London was established. The change which was made in the constitution of the latter university in 1858, when its examinations and degrees were thrown open to all comers, irrespectively of the place or mode of education, is specially noteworthy in the present connection, because it inaugurated a system under which, in course of time, there were called into existence a number of provincial university colleges, whose teachers had no part or voice in the framing of curricula, or in the examination of their students for degrees. This change marks a most important departure in the history of examinations.

Rise and spread of examination system.

During the decade 1850-60 public examinations began to operate on a very wide scale, chiefly owing to the absence of any organised system of secondary education in England and Wales. In the institution of secondary school examinations the College of Preceptors took the lead, its scheme of examinations having been

[1] See his work, *Of a Liberal Education in General*, etc., part i., chap. iii.

formulated in 1853. The Society of Arts, and in 1858 the Universities of Oxford and Cambridge, followed suit, the latter by instituting the well-known local examinations. There can be no doubt of the immense influence of this movement upon the better secondary schools of the country, and of the great benefits that accrued in fixing and defining the scope of secondary instruction, as understood by bodies of individuals well qualified to form an opinion. The point we are here concerned to note, however, is that in all of them the principle of the complete severance of the teaching from the examining function was apparently assumed as an axiom. It is interesting to observe that the same principle was applied to the work of the primary schools when the Revised Code of 1861 made "payment by results" the basis upon which parliamentary grants were to be dispensed.

The plan of rendering examination independent of teaching is illustrated again in the mode of making appointments to the civil and military services which has obtained since 1870, when open competition for these appointments was introduced. Special examinations were instituted for this purpose, and the usual methods of preparing candidates for these tests seem to have been mainly instrumental in bringing into glaring relief the weaknesses of the system. It appears, for example, that we have here the origin of the now familiar use of the word "cram," and of the significant distinction between a teacher and a "crammer". Not only has the State, however, organised examinations for admission to the army, navy, and civil service, but the various corporations charged with the duty of superintending professional training have also instituted tests of a similar character, so that the examinations for admission to the course of training for doctors, dentists, barristers, solicitors, actuaries, accountants, architects, engineers, and chemists, have all influenced the secondary schools to a greater or less extent. Meantime, the schools have also to reckon with the entrance examinations of the various universities, and both schools and universities have had to rely upon examinations in the award of scholarships. In these circumstances it is not surprising that examinations have perhaps been at once the most thorough, and the most severely criticised, part of our educational machinery.

Even during the period of its development critics of the system were not wanting, and it was handled unsparingly by the more prominent educational thinkers of the time. In 1861 Spencer wrote as follows: "Examinations being once passed, books are laid aside; the greater part of what has been acquired, being unorganised, soon drops out of recollection; what remains is mostly inert—the art of applying knowledge not having been cultivated; and there is but little power either of accurate observation or independent thinking".[1] Thring wrote contemptuously of "examiners, who come fresh from their books to judge the work of the practical worker with all its varying factors, award praise and blame in total ignorance of those varying factors, and report this to the amateur power above, which knows still less."[2] R. H. Quick, himself an experienced examiner, supposed that there were "instances in which care for the examination developed into care for the subject of the examination," but added that "these cases are so rare that they may be neglected".[3] And in 1888 the editor of an important periodical was able to secure 400 influential signatures to a strongly-worded protest against "The Sacrifice of Education to Examination". The protesters held that children and youths had come to be regarded by schoolmasters as suitable instruments for earning grants of public money, winning scholarships, and the like; and they recounted the physical and intellectual evils which they supposed were fostered by the inherent faults of the system. They maintained that education was becoming too uniform and stereotyped, that the health of the most promising pupils was often endangered and sometimes ruined, that teachers were losing in intelligent self-direction, that knowledge was no longer prized for its own sake, and that deliberate encouragement was offered to rote-learning and to a wasteful diffusion of energy over a complex array of subjects.[4]

Critics of the system.

But in truth it is not possible to judge rightly of the effects of

[1] *Education*, chap. ii.
[2] *Theory and Practice of Teaching*, pp. 253, 254.
[3] *Educational Reformers*, p. 540.
[4] *The Nineteenth Century*, Nov., 1888, and Feb., 1889.

examinations in general, because their effects differ widely according to the circumstances under which they are conducted. The abstract question whether the tendency of examinations is good or bad does not in reality admit of an answer. Let us, as practical people, take it for granted that public examinations in one form or another are an abiding feature of our educational system, and let us rather ask: Under what conditions should they be administered, and what safeguards should be insisted on, if their best results are to be secured, and their objectionable features reduced to a minimum? As human nature is constituted, the extrinsic stimulus which they provide seems on the whole, and under certain attainable conditions, to be a valuable one. The immediate question for us is, therefore, how to apply the stimulus so that it may not defeat its own purpose. But we must clear the ground by drawing an important distinction.

Competitive examinations.

We must, in the first place, distinguish competitive examinations from those which are simply qualifying tests. Here, however, we must remember that when the candidates at qualifying examinations are placed in order of merit, the distinction to some extent vanishes, since the spirit of competition may then become keen even in these, at least among the best candidates. Now competitive examinations, intended as they are simply as a means of selection, are not strictly germane to the subject of this book. They are not meant directly to subserve the purposes of education, but only to enable certain authorities to pick out from a number of candidates those who are presumably best qualified to fill an appointment or to benefit by an endowment. Their indirect influence on the work of some schools, however, is very great, and, unfortunately, it is pretty generally acknowledged to be pernicious. Competitive examinations are chiefly responsible for the unpleasantly suggestive comparisons, that have often been drawn between schools and hot-houses, schoolboys and race-horses. "I have no hesitation in saying," writes Dr. Dukes, "after a long experience, mature consideration, and with the requisite knowledge for gauging results, that in a large proportion of instances an early scholarship is positively harmful to the individual child, especially scholarships

which are assigned on entering a secondary school at fourteen years of age, rather than those which are granted at a maturer age, on leaving school at the age of nineteen for the university. At one time the child is pressed from an early age in order to obtain it; having attained it, he is placed at work in excess of his enforced capacity, and constant pressure is thus maintained throughout his school career."[1] No doubt a good deal can be said on the other side,[2] but there is strong evidence that competitions for scholarships do a good deal of mischief: physical, by at least occasional instances of over-pressure; intellectual, by the encouragement of a harmful precocity, especially when premature specialisation is also involved; and moral, by forcing to the front the element of material reward. Still, it is difficult to see how such examinations can in practice be superseded. They flourish, as they grew up, through the natural desire of certain schools to use their valuable endowments for the purpose of attracting the cleverest pupils. One can only say that in the circumstances it is all the more necessary that the art of examining should be thoroughly understood by those who practise it.

Qualifying examinations.

More relevant to the subject of this book, because more expressly intended to further the cause of sound instruction for all pupils whatsoever, are those examinations which are simply qualifying tests, or in which the spirit of competition is at least not prominent. Even these involve similar dangers, unless they are ably and carefully administered. We now proceed to point out more precisely where these dangers lie, and in what directions remedies are to be sought.

Dangers of Examinations. (1) Regarded as an end rather than as a means

One of the dangers of public examinations is the tendency of teachers to make the examination the mainspring of their activity. When this is the case, the whole organisation of the school, as embodied in the time-table, as well as the tone and spirit of the teaching, is profoundly influenced, for better or worse. Examining authorities plainly take a great responsibility upon

[1] Barnett's *Teaching and Organisation*, pp. 357, 358.
[2] See, for instance, *Special Reports*, vol. vi., papers by Canon Lyttelton and Mr. Lynam.

themselves—much greater than has been recognised in the past—when they practically determine what subjects shall be included in the curriculum, and how the time shall be apportioned between those subjects. This is the way in which school curricula have been too commonly settled in this country. Only to the minds of the few have the vast importance of the course of study and the principles upon which its construction should depend, usually been present. In actual practice such discussions as that contained in Chapter VI. have been little regarded. The curriculum has been settled in a more or less haphazard way by various examining bodies, who have differed considerably among themselves, to the great inconvenience of the schools, as to what constitutes a good course of liberal studies. But these are difficulties that *can* be removed. They are not necessarily part and parcel of the system.

(2) Over-estimation of material success.

Next among the dangers of public examinations may be mentioned that of encouraging the pupil to regard a material success as the first thing, and the pursuit of knowledge as the second—possibly a bad second. The genuine love of learning is one of the cardinal objects of instruction, and to substitute for that object the mere desire for distinction is manifestly to aim low. Still, we must not press this argument too far. It sometimes happens that an end is more surely achieved when it is not directly aimed at. As we shall see in our subsequent discussion of the prize system, and as most of us know from our own youthful experience, the rough places of study are sometimes made plainer, the road towards mastery of our subject is sometimes smoothed, and delight in its pursuit is sometimes created, by the prospect of that success in examination which lofty critics affect to despise. Everything, in fact, turns upon the quality of the examination. The more carefully it is designed to encourage the formation of healthy mental habits, and the more confident pupils and masters feel that the best kind of preparation will "pay" best in the examination room, the less will be the mischief done by anxiety to succeed.

But unfortunately, owing to the fact that the difficulty of the art of examining has not been duly appreciated, this confidence

has seldom been realised or deserved. For one thing, examiners have been too ready to believe that a candidate who shows a knowledge of unimportant matters must *à fortiori* be well informed on important ones. Proceeding on this entirely false assumption, they have too often neglected the salient features of the subject, and sought in its nooks and crannies for materials upon which to base their questions. Exceptional grammatical forms, words and phrases of rare occurrence, comparatively obscure historical events, rarely employed mathematical processes—these form the happy hunting-ground of the examiner who does not know his business. The reflex influence on the teaching is of course disastrous. Instead of encouraging people to fasten their attention on the essential and to ignore the inessential, the examination has precisely the contrary effect. The most enlightened examiners have indeed striven to stem the tide of mischief. "I can lay my hand on my heart," writes Mr. Beeching, "and profess I have never set a question upon the sources of a play of Shakespeare since 1886, except when such a question has been prescribed by powers to which even examiners must bow, and then the answers were in every way satisfactory. 'Shakespeare got most of his materials from Plato,' or 'from Aristotle and Plato,' or 'from De Cameron's *Boccaccio*,' or 'from Collier and Malone'. Excellent children, who refused to be interested in chips from Shakespeare's workshop! So much for what examiners mean by the understanding a play."[1]

(3) Studies unfavourably influenced by unskilled examiners.

Another undesirable feature of examinations, and one to be strenuously avoided, is the tendency to lay undue stress, especially in the elementary stages, upon matters of bare fact—matters which call only for an exercise of memory, and which make no demands upon the pupil's powers of judging and inferring. Treated in this way, arithmetic becomes a system of devices for getting answers to sums, without reference to the mode by which the results are obtained and the principles underlying the processes; geography sinks to the level of a disconnected catalogue

[1] In Cookson's *Essays on Secondary Education* (1898), pp. 225, 226.

of names and facts, and history amounts to a lifeless list of events and dates. The favourite directions of the examiner to "name," to "mention," to "give a list of," to "tabulate," and so forth, illustrate this point. The reason of such procedure does not always lie in lowness of educational ideal, but rather in the fatal facility with which the answers to questions of this sort are revised and numerically assessed. The jaded official, who has perhaps many hundreds of papers to look through, proposes this type of question in mere self-defence, because his labours of revision are then made as mechanical as possible, and the exercise of his judgment is little called for. To estimate the store of facts with which a candidate has equipped himself is an easier duty, and one more susceptible of being performed with arithmetical accuracy, than to test his mental grip. But unless the subtler task is attempted, the examination defeats its own purpose of promoting careful and intelligent teaching.

The term "cram".

The preceding remarks naturally suggest a consideration of the term "cram," to which reference has already been made, and it may help to elucidate the subject and to remove some misapprehensions if we attempt to attach a clear meaning to this term. It is sometimes applied, but not always with justification, to the practice of rapidly revising, immediately before an examination, the main outlines of a course of instruction. The matter thus revised may represent the results of some months of careful and fruitful study, which have perhaps taken the form of a synopsis of a standard work or of an extended series of lessons. Now to go rapidly over the ground thus slowly traversed, in order that the threads of this laboriously acquired knowledge may be gathered up and brought to a focus, may be by no means inconsistent with the true ends of education. For education is a preparation for life, and examinations are not the only crises in one's history when one's courage needs to be screwed up, and when all one's available resources need to be concentrated upon a given point. "The agony of the examination room," wrote Prof. Jevons, in his essay *On Cramming*, "is but an anticipation of the struggles of life. The barrister before the jury, the preacher in his pulpit, the merchant on the exchange flags, the

member in the House—all are going in for their 'little goes' and their 'great goes' and their triposes."[1] In all such cases the moment comes when the results of meditation or toil or enterprise must be made to converge to a single point, and to contribute to the success of a single effort, and thus what we have called the focussing of the main lines of thought presented by the subject of examination may prove a valuable exercise. It should be added, however, that these remarks, from the nature of the case, apply only to older pupils.

Again, the term "cram" is sometimes applied to the common practice of selecting carefully those portions of a subject which are most likely to be questioned upon, and of excluding with equal care those parts that are not so likely to be included. Now the effect of this practice will depend entirely upon the quality of the examination. To map out a limited course does not necessarily imply irrational teaching. A syllabus of instruction may be narrowed down either for the entirely commendable purpose of causing the essentials to be mastered thoroughly, and the details to be added if and when they are needed; or for the purpose of ensuring success at the examination. If these aims are made practically coincident—and this will be so only when great care is exercised in framing the questions—the custom of selecting the material of study with a view to success in the examination is no longer an evil. This is the sort of preparation which Jevons, in the place I have referred to, called "good cram," but in which it seems difficult to discern the true differentia of cram at all.

Nor does rapid acquisition necessarily amount to cram. The former is perfectly compatible with sound methods of study. If, for example, I possess a large number of well organised ideas upon a given subject, then new ideas quickly fall into their places. Provided this assimilation of the new to the old be brought about, it matters not how rapidly the new facts are learned, for they are well learned. If, on the other hand, such assimilation does not take place, it matters not how slowly the facts are learned, for they are badly learned; they are, in fact, crammed. The pupil who is caused to learn by rote a chronological compendium of

[1] *Mind*, vol. ii.; also *Methods of Social Reform*, chap. iv.

history, and who remains in ignorance of the meaning and connection of what he learns, is being crammed, whether the process takes three weeks or three years. We conclude, then, that our unpleasant metaphor, with the correlative notion of mental dyspepsia, is rightly applied to knowledge, so-called, which is unorganised, unconnected, unsystematised. Again we must remark that, when they are wisely ordered, examinations do not encourage the evil in question. If examiners clearly recognised the real nature of the sort of preparation which the term cram fitly symbolises, and resolutely set their faces against its toleration, the mischief might at least be reduced to small proportions.

Remedies for the evils of examinations. (1) Carefully devised questions.

So much for the dangers that lurk in the system of public examinations. Let us now turn to the consideration of the right remedies and safeguards. The first of these is at once suggested by the remarks that have just been made concerning the tendency of certain types of question. A public examiner should bear in mind that his papers necessarily serve the purpose, not only of testing the knowledge of candidates on a particular occasion, but also of determining, to an important extent, the mode in which future candidates will be prepared. The examination will inevitably form some sort of guide to teachers in the methods they adopt. The examiner should therefore ask himself concerning every question he puts: Will this question have a good effect upon the teaching? Will it encourage the study of the right kind of thing in the right kind of way? Is it perfectly intelligible, and is it properly adapted to the candidate's stage of development and professed attainment? Will it discourage the learning by rote of what is not understood, and the "cramming" of lists, rules, exceptions, odd instances, tabulated statements, bald synopses, and skeleton outlines? He should therefore think twice and thrice before he asks candidates to "give a list of common nouns derived from names of persons or places"; or to "give the dates, circumstances and results of the following battles"; or to "give the meaning and derivation of *scambling*, *career*, *umbered*, *farced*, *dout*, and *tucket*, as used in Shakespeare's *Henry V.*"; or simply to "name countries from which we get coffee and india-rubber,

flax and platinum, furs and timber, cork and wine"; or to write down the irregularly formed feminines or plurals of a row of rarely occurring French substantives.[1] He will know that, even though it be desirable that candidates should possess information on some of these points, he dare not put his questions in these clumsy forms. There is not one of these questions which does not encourage cram, and, let it be carefully noted, most of them could have been put so that they would have discouraged cram.

Should every branch of instruction form a subject of examination?

It has sometimes been contended that only certain exercises, chosen because of their slight liability to the evils above illustrated, should ever form the subjects of public examination. The examiner is required to award marks, and perhaps to arrange the candidates in order of merit. In his anxiety to do this quite fairly, and perhaps in his desire to facilitate the process of marking, he is naturally prone to propose questions turning upon matters of bare fact, and so admitting of perfectly definite answers. Thus brute retentive power is apt to count for more than intelligence, because memory work is more easily tested and accurately assessed. "I myself," wrote the late R. H. Quick, "can see no way of escape from the pernicious influence of this, except by taking as examination subjects only such things as cannot be crammed: mathematics, unprepared translation, composition, and the like. Such things as history, geography, English literature, should be taken in school and elsewhere as unprepared subjects, the teacher seeking to interest the pupils and not troubling himself about any test of results."[2]

There seems to be small doubt that the distinction here hinted at between exercises that are and exercises that are not suitable for public examinations is in some respects important. For such a purpose, the custom of prescribing books for translation is full of perils; so much so, that we find a well-known examining agency

[1] I take these examples from a set of University Local Examination Papers that happens to lie to hand as I write.

[2] Storr's *Life and Remains of Quick*, p. 275. *Cf.* H. Latham's distinction between "information subjects" and "faculty subjects" in his work on *The Action of Examinations*.

issuing a special notice, pointing out that "the examiners in the various languages find that there is a widespread habit of learning by heart translations of passages from the prepared books," and somewhat helplessly complaining that "this practice, besides being very injurious educationally, impairs the value of the examination as a real test of knowledge of the languages". Ought, then, prepared translations to be entirely superseded? This is a question of principle which should hardly be decided by the requirements of mere machinery. The principle should be settled first, and the machinery then adapted to the decision arrived at.

In other respects, the distinction above referred to is by no means clear. Geography, for example, is classed as a subject which calls only for an exercise of memory, and in which the requirements of examination can easily be met by mere cram. In the past this has undoubtedly been so. But who amongst the cultivators of modern scientific geography would for a moment admit that this study, rightly pursued, does not make full demands on the pupil's powers of comparing and contrasting, judging and reasoning? On the contrary, it is the open complaint of competent teachers of geography that examiners in this subject place ruinous stress upon matters of bare fact, statistical and topographical, to the exclusion of questions that call for reflective thought.[1] Similar remarks apply to the other subjects classed as memory subjects. Where they are well taught, they are by no means mere appeals to memory; and the examination should follow the best teaching. We must conclude then, that though there are some subjects the teaching of which may receive grievous indirect harm from unskilled examiners, yet there is none worth teaching in which it need be dangerous to examine.

(2) Examiners to be teachers.

But where are we to look for the right kind of examiners, and what precautions ought to be taken in the appointment of these officials? If the preceding remarks are justly founded, it seems clear that an examiner should be, not only a master of his subject, but also an experienced and successful teacher. We may pretty safely go further, and say, that his experience as a teacher should have lain, at least in part,

[1] See *The Geographical Teacher*, Oct., 1901.

amongst pupils of a stage of development similar to that of the candidates he is to examine. One thing at least is quite clear, that the man of high academic achievements, whose knowledge of boys is limited to distant recollections of his own schooldays, and who in those days probably had little intellectual sympathy with the dull or even the average boy, is one of the last persons to be entrusted with the delicate task of gauging the efficiency of a school, or the merits of a miscellaneous assemblage of candidates. Not knowing, as a teacher knows, the precise effects of public examinations upon methods of teaching, he is peculiarly liable to such mistakes in the proposing of questions as those we have commented on. Not knowing, as a teacher knows, the mysterious and often wayward workings of a schoolboy's mind, he is apt to run his blue pencil impartially through the stupidest and the most promising of blunders. Not knowing, as a teacher knows, the stuff of which the average schoolboy is made, he is apt to conceive it his business to sound the depths of that person's ignorance—as if that were a difficult task!

(3) Closer connection between teaching and examining.

After all, however, the real remedy for the evils of examinations would appear to lie in a closer relation between the teaching and the examining functions. As we have seen, the tendency in all grades of education, primary, secondary, and tertiary, during the latter half of the nineteenth century, was to allow those functions to drift apart, and so the examination came to be regarded, not as the natural consummation of the course of study, necessary to the satisfaction both of teacher and of pupil, but as something merely superadded from without, and intended only for the satisfaction of others. The result was that examination became more or less akin to a game, partly of skill and partly of chance, in which the teacher and pupil on the one side were opposed to the examiner on the other; and the teacher's chief concern has too often been, not to make the instruction sound and interesting, but to play the game. These and other mischievous consequences are averted by such a combination of internal and external agencies as will give the needed freedom to the teacher in framing courses of instruction and in devising appropriate methods, and will yet

furnish an adequate public guarantee that the teaching is thorough and comprehensive. The creation of a teaching university of London, the emancipation of provincial university colleges from the purely external examinations conducted by that university, the institution of school examinations in place of those general tests which have been supposed equally adapted to all schools, and the substitution of inspection for examination in the primary schools, afford abundant evidence that great changes have recently taken place in the direction here indicated.

(4) Examinations not too frequent.

But even though the mode of examination be carefully planned in accordance with the principles above explained, it remains true that no system of public examination is good if it be applied at frequent intervals during the pupil's school career. The annual examinations which formerly prevailed in English primary schools are here again full of instructive warning. When a school is frequently subjected to the tests of the outside examiner, its whole aim becomes dominated by the idea of examination; the dull are unduly pressed to reach the standard, whilst the clever are neglected because they can reach it easily; success in the examination is regarded as more important than the genuine desire to gain knowledge; the knowledge acquired even by small children is regarded as a commodity of little value, unless it is ready to be served up in the form required by the examiner; and an exaggerated importance, most mischievous in its effects, is attached to the written work of younger pupils, it being quite wrongly assumed that what a young child knows he can therefore easily set down on paper.

Of formal written examinations, extending over the whole curriculum, most experienced teachers, in whatever type of school, would probably agree that one is enough, and that this should take place at or near the close of the pupil's school career. In the junior forms all the inquiry that is necessary can be conducted by means of intelligent and sympathetic inspection, which has the advantage of placing the stress on oral rather than on written work, and on the methods employed by the teacher rather than on objective results, the slow appearance of which is perfectly compatible with generally sound instruction.

Reference has already been made to the chaos wrought in secondary education by the large number of existing examinations, with all their varying requirements. Owing to the absence of any constituted authority, and to the haphazard way in which examinations have been multiplied, they have injuriously affected schools in ways that are quite avoidable. Whilst no one can blame the several professions for guarding the entrance to their ranks by insistence upon certain standards of general attainment, yet those standards are so far uniform as to make it unnecessary that each profession should have its own separate examination. As regards the organisation of secondary schools, and the simplification of curricula, it would be a great gain if the present excessive number of examinations could be reduced, or more precisely assimilated. This is the point at which the State might intervene, to the great advantage of all concerned.

REFERENCES

The subject was dealt with by H. Latham in *The Action of Examinations* (1877), and in his article, "Examinations," in the *Encyclopœdia Britannica* (9th ed.). Some interesting observations on examinations are contained in Storr's *Life and Remains of Quick*. For a more recent treatment, with special reference to English secondary schools, see the *Report of the Consultative Committee on Examinations in Secondary Schools* (1911). See also the article in *Encyclopœdia Britannica* (11th ed.), P. J. Hartog's *Examinations and their bearing on National Efficiency*, and *Essays on Examinations* (International Institute: Examinations Enquiry).

CHAPTER XIV

THE SCHOOL AS ORGANISED FOR TEACHING

"A mob of boys cannot be educated"—EDWARD THRING

The meaning and problems of organisation.

WE have thus far dealt with the problems of instruction without specific reference to the number of pupils that happen to be taught at the same time. Most of what we have said applies equally to the instruction of a single child, or to that of a few children of one family, or to that of a number of children coming from different homes and gathered into a schoolroom. It now remains for us to consider the peculiar questions that arise in connection with the concurrent instruction of numbers of pupils, *i.e.*, the various questions that group themselves under the phrase "school organisation". Organisation signifies, in general, the arrangement of the parts of a complex whole with a view to its smooth and effective working. In Chapter IV. we touched at some length upon the organisation of education on the large scale, under the various public authorities. But each school also needs to be organised; a task which is, or should be, left to the head teacher of the school, on the ground that it is a strictly professional matter, requiring the knowledge and skill which can only come through special study and experience.

The head of a school finds himself confronted with a complex array of materials which it is his business to get into working order. The position will be clearer if we imagine the case of opening a new school. There is, in the first place, a collection of pupils; secondly, a staff of teachers; thirdly, a number of branches of instruction; and fourthly, a more or less perfect and adaptable building. The task of the organiser is to fit these various materials together in such ways as will best conduce to the realisation of his

educational ideal, just as the various parts of a machine are fitted together so as to accomplish the purpose for which it is intended. Behind these questions of mere machinery there lie, of course, certain other questions of vital principle, which we have already discussed and which we must here regard as settled. The studies and exercises selected to occupy the pupils' minds, and the arrangement of the curriculum throughout the years of school life, are to be determined by such criteria as those laid down in the preceding chapters, and must here be taken for granted as portions of the machinery. A man may be a good organiser, though in other respects an indifferent schoolmaster; and so a school may be well organised, though its curriculum be defective in its content or sequence.

Classification of pupils.

First and foremost among the problems of organisation stands that of classifying the pupils. In order to understand the advantages of classification one needs only to imagine a school conducted on the plan usual in the grammar schools and dame schools of a former generation. The master or mistress remained seated at a desk, and the pupils occupied benches ranged round the walls of the schoolroom. They wrote copies, worked sums out of books, learned grammatical rules, and so forth; and they were called up individually to have their work examined or to receive help. There was no collective teaching as we know it. Under these circumstances the stimulus of emulation did not act strongly, the teacher's time was badly economised, control was difficult, and harsh punishments were therefore common. Further, the instruction tended to resolve itself into a system of memory exercises. The best that can be said for the plan is that the teaching, such as it was, was nicely suited to individual scholars, and that the ablest of them undoubtedly formed those habits of self-reliance which in our modern schools are sometimes conspicuous by their absence. The spread of education has, however, necessitated the establishment of large schools, and the division of the pupils into classes or forms. Side by side with this change, the practice of collective oral teaching has of course been largely developed.

There arises at this point the question of the proper size of

classes. The theoretical requirement seems clear. A class ought to be large enough to enable the teacher to secure the peculiar advantages of collective teaching—the stimulus of emulation and the "sympathy of numbers"; but it should not be so large as to make it impossible for him to have a thorough knowledge of each individual member. How this theoretical requirement should work out in practice it is not easy to say, since so much depends upon such varying circumstances as the subjects of instruction, the amount of written work demanded, the minuteness with which this work is revised, the personal qualities of the teacher himself, and the time reasonably required by him for purposes of preparation. We need not be surprised, therefore, at the widely divergent views on this matter that have been expressed by practical teachers, according to the special nature of their experience and the special difficulties they have individually felt. Still, we may perhaps venture to affirm that an upper form in a secondary school should not number more than about twenty, and that forty is the maximum with which the teacher of a lower class in a primary school can be expected to cope successfully.

Size of classes.

A perfect classification is obviously one in which the pupils of each group are of equal, or nearly equal, attainments. But in judging of attainments we may have regard to each of the important branches of instruction taken separately, or we may be thinking of the curriculum as a whole, or we may have in mind certain groups of subjects. Corresponding to these different points of view, three systems of classification are theoretically possible. The first is that which places each pupil in the same division for all subjects. This we may call the single or the rigid class system. It is well illustrated in the practice that now prevails in the secondary schools of Germany. There the official programme of studies is so arranged as to provide a definite amount of work for each year of school life in each of the branches of instruction; the programme for each year in all branches is complete in itself, and lies, so to speak, snug in its own skin; the pupil is supposed to make a concurrent yearly

Systems of classification.

(1) The single or class system.

advance in all the subjects of the curriculum; and the whole class works together in all the different subjects, with no special reclassifications. The system obviously lends itself to extreme simplicity of organisation, and its tendency is to lay a broad basis of general culture, upon which a more specialised superstructure may afterwards be raised. Moreover, the idea of a harmoniously constructed programme for a year's work is in perfect keeping with the principle of correlation expounded in an earlier chapter. The instruction in the various subjects need not proceed on independent lines, but an attempt can be made at connecting them, so that related subjects may at least form a fairly well-knit whole, and the year's work may be conceived as possessing a unity of its own. On the other hand, the system clearly involves some danger of undue pressure in individual cases, or at least the risk that a pupil may be placed in the dilemma of having either to work too hard at an uncongenial subject, or to mark time for a considerable period in subjects with which he finds less difficulty. These risks are, perhaps, reduced to manageable proportions if a pupil who shows weakness in one subject, but who, nevertheless, reaches a fair level of attainment in the rest, is promoted at the end of the year; and this appears to be the custom in Germany.

It is worth while noticing that the single system of classification was strictly followed, with variations in detail, in the primary schools of England from 1862 down to 1890. The "standard" system, however, as it then prevailed, was by no means comparable with the German system just described. The courses of instruction were not well thought out; the amount of work prescribed indicated rather a bare minimum than a broad outline of a generous course of primary school instruction; no provision was made for compulsory attendance during the years which the course was intended to cover; and, to crown all, the efforts of the teachers were necessarily directed to enabling their average and their dull scholars to pass muster at an individual examination, on the results of which grants of public money were assessed. After a protracted conflict between the two ideals, that of a fixed programme with a single classification and that of freedom in

classification, changes were made in the latter direction by the Code of 1890; and since that time the tendency in the primary schools has been to abandon the plan of having a prescribed course in all subjects for each year of school life.

(2) The free or manifold system.

The second system to be noticed is that which makes a separate classification of the pupils for every branch of study, so that it becomes possible for any one pupil to have a time-table quite different from that of any other in the school. This plan, which is rarely adopted, is the very antithesis of the one described above, since it involves a complete departure from the idea of a unified course of study pursued during a school year. Its great advantage is that each pupil's course of study is exactly adapted to his ability and attainments. Its great drawback is the absence of the form master's definite responsibility for the individual pupil. Where the system has been tried, this difficulty has been overcome, at least in part, by the appointment of consulting masters, a boy being assigned, as a rule, to one such master during the whole of his school course. But there are other disadvantages. The system clearly tends to encourage specialisation at an age when all-round culture is surely the thing to be aimed at; and the substitution of distinct courses of study in the different subjects for a compactly arranged course in all subjects makes it very difficult, if not impossible, to establish any effective co-ordination between the various parts of the scheme.

(3) Mixed systems.

From the age of nine or ten to that of thirteen or fourteen, the English child who attends a secondary school, or a separate school preparatory thereto, is commonly placed in the same class for all subjects, *i.e.*, the single system of classification is followed as in German schools, with the exception that towards the close of the period there is in preparatory schools a tendency to specialisation, and therefore to reclassification, owing to the competition for scholarships. During the remaining years of secondary school life, the plan usually followed in the greater schools of England is a compromise between the German plan and the "free" system described above. Into the details of their organisation, which differ widely in different schools,

we do not enter.[1] It will suffice to note that with respect to a large group of studies, commonly known as "form work," the single system prevails; every pupil is placed in the same class for these, and is gradually promoted from class to class on the ground of his general attainments in them. Certain other subjects—say mathematics, modern languages, and science—are regarded apart from the form subjects; for these, reclassifications are made, and promotions take place independently of those in the form subjects. In schools whose upper portions are split into two or more "sides"—classical, modern, scientific, etc.—the form work will of course differ in the different sides. The extent to which differentiation of curricula, and consequent complexity of classification, are carried varies greatly. In some schools all the pupils above the junior forms are reclassified for mathematics, modern languages, and science; whereas in others differentiation is introduced only to the extent of requiring a choice to be made, say, between Greek, German, and science. But, generally speaking, the principle remains the same throughout, that a pupil need not work with the same classmates in all subjects, but may be in different classes for certain subjects. In schools below the first grade, a closer approximation to the rigid class system is common, but in the greater secondary schools the modern demand for varied curricula has led to wide departures from the older and simpler plan of placing a boy in the same class for all subjects.

Remarks on the above systems.

The system of classification which we have marked off as the free or manifold, that in which a pupil may be separately classified for every subject, may be set aside as one which, for reasons already given, is unlikely to win wide acceptance. It is more to the point to compare the rigid class system prevalent in Germany with the various forms of compromise which find favour in England. The tendency of the German system is obviously to favour the average pupil, and to produce a large proportion of boys of sound general attainments; whilst the tendency of the English system is to give greater

[1] For many such details see the chapter on "Organisation and Curricula" in Barnett's *Teaching and Organisation*; also the *Public Schools Year Book*.

scope to the special talent of the individual scholar, but to make much less of the boy of moderate abilities. It should be added, however, that the latter tendency is to be ascribed, not only to the different system of organisation, but also to the facts that the intellectual aims of the German school are much more clearly defined and generally understood, that education is taken more seriously by all classes of the community, and that the German secondary schoolmaster is far less of an amateur in the art of teaching than his *confrère* in this country.

It will be seen that the question of classification is largely bound up with the problems of curriculum and specialisation discussed in a former chapter, and the practical conclusions to which we are now led correspond with those which were there set forth. On the whole we may safely say that in the primary school the general rule should be that a pupil is in the same class for every subject, and that the work of each class should form a carefully elaborated and interconnected whole. Every experienced teacher knows, however, that a case does now and then arise of a pupil who, for example, is apt at arithmetic, but who is abnormally slow in learning to read; and it ought to be possible to deal with the case by re-classification. Such an instance should, however, be regarded as quite exceptional, both for the sake of the pupil himself, and for the sake of the simpler organisation of the whole school. Further, what is best for the primary school is also best for pupils of corresponding age in the secondary school, the most notable class of exceptions here being that of children who come from the primary school ignorant of the rudiments of a foreign language but well grounded in the remaining subjects of the curriculum. When we reach the upper forms of the secondary school, the differentiation of studies which we have seen to be more or less inevitable must necessarily involve considerable departures from the rigid class system, though even here the best opinion inclines to the latter system, so far as it is possible.

The difficulties of classification increase as the size of the school diminishes. If the total number of pupils in a school is equal to the number considered sufficient for one teacher, multiplied by

the number of years normally spent in the school, the problem of classification is relatively simple; and if the total number is in excess of this, parallel forms can be created, and each form may then be made still more homogeneous from the point of view of attainment. If, however, the total number of pupils falls below the said figure, it is obvious that the same teacher must be placed in charge of pupils whose attainments differ considerably. A good example of the difficulties that thus arise is seen in the rural primary school where the average attendance, exclusive of children under seven, is, let us say, sixty or thereabouts, and where the staff consists of two responsible teachers. The school is divided into an upper and a lower portion, in each of which a child remains about three years. By the adoption of a sort of cyclic order in the choice of reading-books, of geographical and historical matter, of subjects for nature-study, and so forth, the children in each division are taught together as well as may be, without wearisome and profitless repetitions from year to year. Such an arrangement, however, breaks down in the case of arithmetic, where the order of instruction must be more severely logical. For this subject, each division is subdivided into three groups, the total number of groups corresponding to the usual length of school life, and the instruction is carried on by means of occasional oral lessons and by the employment of books containing suitably graduated examples which each scholar can work through. In small secondary schools, the difficulties, *mutatis mutandis*, are similar. Two or more forms have to be taught together, and the difficulties are lightened by making as much of the instruction as possible common to all the pupils in the group so constituted.

Classification in small schools.

Closely connected with the problem of classification is the question to what extent the instruction shall be entrusted to specialist teachers of subjects, and to what extent it shall be given by form-masters. In the upper part of a secondary school, where the pupil's studies have become more specialised than before, and where it is above all important that he should come under the influence of men of ripe scholarship or of first-rate scientific attainments, much

Form-masters *v.* subject-teachers.

of the teaching must inevitably be done by specialists—by classical, mathematical, science, and modern-language masters. Even here, however, it would appear, as we saw in our chapter on the Correlation of Studies, that much mischief may be wrought by the undue separation of related subjects—of classics from the subjects usually called "English," and of mathematics from science. It has been truly remarked that "the great teachers have been people who taught more than one subject to their pupils, and had thus many lights on each individual character, and means of cultivating a many-sided personal interest".[1] Still, it is obvious that the specialist teacher is a permanent and necessary factor in the instruction of boys and girls who are carrying their studies to the point where the school ends and the university begins.

But with respect to the middle and lower forms of the secondary, and all the classes of the primary, school, opinion is more sharply divided. Those who believe in entrusting most of the teaching of a class to a single master argue with great force that the teacher's completer knowledge of the individual scholar is a great gain, both morally and intellectually; that the mutual sense of responsibility between teacher and pupil is quickened; that the pupil is put first and the subject next; that there is not so great a tendency towards narrowness of outlook on the part of the teacher; and that after all, as Professor Seeley once said, a school is not a university, and profound learning is not so necessary in the former as in the latter. They point out, too, though perhaps less convincingly, that the system tends to simplicity of organisation; and that, as the teaching of some subjects imposes a greater physical strain upon the teacher than that of others, a change from one subject to another may from this point of view prove a welcome relief. On the other hand, those who believe in the alternative system urge that the subject-teacher possesses the great advantages of a completer knowledge of his subject, and of a keen interest therein; that full scope is given to each man's special gifts; that freshness of treatment and originality of method are more to be expected when one confines himself to a limited portion of the curriculum; and that even the moral advantages of the system are

[1] Barnett, *Common Sense in Teaching*, p. 187.

often great, as, for example, when there happens to be an almost total absence of sympathy between a particular pupil and a particular teacher.

To a certain extent it is no doubt true of these different forms of school organisation that "that which is best administered is best," and when successful organisers take opposite views, we must be careful not to dogmatise. At the same time, it seems right to say that the safest system is that which, as regards middle and junior forms, favours a large nucleus of form-work, conducted by the form-teacher. The moral advantages of placing young pupils as much as possible under the same teacher are, as a rule, quite undeniable, and the intellectual advantages which accrue when connected subjects have a fair chance of being exhibited in their true relations are equally great. To this general rule, however, every school will have its own exceptions, depending on the special interests of the various teachers. Even in the primary school, where the class-teacher system is commonly adopted without modification, it frequently happens that one member of a staff is specially interested in a certain subject, say history, or music, or drawing, or nature-lore; and in such a case much is to be gained by a partial adoption of the subject-teacher system, or at least by a partial delegation by the head teacher of his supervisory functions, as far as regards the subjects in question.

The school staff: (1) Functions of the head teacher,

The last remark suggests a brief consideration of the respective spheres of the head teacher and of his assistants. In general it may be said that the head teacher's functions relate to all that concerns the welfare of the school as a whole, whilst the assistant's duties relate to those portions of the school organism—whether scholars or studies—which are committed to his especial care. The head teacher will settle the details of the curriculum, except so far as these are authoritatively prescribed; he will construct the time-table, in the discharge of which task it may be his business to hold the balance between contending teachers of subjects; he will assign their duties to his subordinates; he will be responsible for the classification and promotion of scholars; he will make frequent

tours of inspection and conduct occasional examinations; he will supervise with special care the work of young and inexperienced masters; and he will make suggestions to the school governors as to structural alterations, furniture, equipment, and any new departure involving additional cost. In a small school he will, as a rule, undertake a considerable share of the actual teaching, but in a large school this part of his duties must necessarily be reduced to much slighter limits than were customary in the days when schools were organised on simpler plans. They are probably right, however, who observe with misgiving the modern tendency to make schools so large that the head of the school, presumably an able and experienced teacher, becomes "a species of scholastic shopwalker," being so much occupied with duties that pertain to a registrar or secretary that he is unable to take any part in the teaching, and finds it difficult or impossible to know his boys as individuals.

(2) and of assistant teachers.

The first and most obvious duty of an assistant is to teach the classes and the subjects entrusted to him, and to keep careful records of the work done. Besides this, he will take such share in the general management of the school as may be assigned him. He will also promote in all practicable ways the healthy corporate life of the school, and to this end he will take a personal interest in the boys' games and societies.

Staff meetings.

Though the ultimate responsibility for all that concerns the organisation of the school as a whole must rest with the head master, he will naturally desire to take counsel with his assistants; and though each assistant has his separate share of responsibility, he will desire to compare notes with his colleagues. For these purposes periodical meetings of the staff, presided over by the head master, should obviously be of great utility. In small schools such meetings are, perhaps, unnecessary, or, at least, need not be frequent, because opportunities of consultation are continually arising when the staff consists only of a few persons; but in schools of great or even moderate size formal meetings can hardly be dispensed with. Apart from their

convenience for the discussion of points involving the immediate welfare of the school, and for comparing notes on pupils who have distinguished themselves either in a good or in a bad sense, they help the members of a large staff towards a clearer understanding of one another's views, and they serve as a reminder that, though every teacher has to a greater or less extent his own special aims, yet all are engaged in a common undertaking—that of making the school a thoroughly efficient instrument or its purpose. In some schools it has been found also that the occasional reading and discussion of a paper on some specific topic connected with the theory and practice of education has had excellent results. There are certain obvious dangers to be avoided, and not the least of these is that such meetings may be too frequent or too prolonged to be a source of profit to hard-worked men and women; but under wise management these dangers cannot become serious.

The school time-table.

The details of organisation above discussed, and a great many besides, are summed up in that highly important document, the school time-table. So nicely are the organisation and the general aims of a school reflected in the time-table, that a copy of this instrument, complete in all particulars, together with a plan of the buildings, would enable a person of experience to form a fairly just estimate of the care and skill bestowed upon the management of a school which he had never yet seen. The composition of the time-table, especially when the school is large and the classification of the scholars complex, is a task sufficient to tax the powers of the most skilful organiser.

Its necessity.

In order to appreciate the advantages of a carefully devised time-table, the young teacher will do well to reflect upon his own college life, and especially upon that portion of his time which was allotted to private study, as distinguished from attendance at lectures. Supposing that he was neither a failure nor an erratic genius, he will remember, in the first place, that strict adherence to a pre-arranged plan of study, in which the available hours of each day were methodically assigned to definite pursuits, conduced largely to the formation of those habits of order, regularity, and steadiness of purpose, which are the secrets of successful work, not only at college, but also in after life. Again, by

considering once for all the various subjects to be studied, and by settling the proportionate time to be given to each, one makes sure that each subject receives its due share of attention, the most important or difficult receiving the greatest share, and the easiest or least important being not entirely neglected. Further, a time-table, by showing exactly what is to be done next, and by automatically directing one's energies in a certain direction, prevents waste of time and of will-power. As a rule, one does not expect marked success from a person for whom, as William James puts it, " the time of rising and going to bed every day, and the beginning of every bit of work, are subjects of express volitional deliberation ".

The functions of the time-table in school economy are similar to those sketched above. The time-table stands for organised endeavour to compass the intellectual aims of the school; but, more than this, it contributes directly to the formation of character by accustoming children from the first to the notion of working in methodical fashion, and by counteracting betimes the tendency of the natural man towards irregularity in the conduct of life. To be sure, the arrangements set forth in the time-table need not be as the laws of the Medes and Persians. On the contrary, the best interests of the school or class may sometimes be served by a departure from routine. Such an occasional exercise of the teacher's discretion does not, however, touch the general rule of faithfulness to prescribed duty.

What the time-table should show.

The school time-table should show precisely the hours between which every lesson is to be given, and the exact times set apart for religious observances, the marking of the roll, recreation, and for any other exercise which, though regularly recurring, does not rank as an ordinary lesson. It should also show who is to give the lesson, and the room or other place in which the lesson is to be given, unless these details are otherwise well understood by all concerned. In one respect, however, it is easy to make the time-table much too detailed and prescriptive. Each of the chief branches of instruction is subdivided: mathematics into arithmetic, algebra, and geometry; English into reading, writing, grammar, composition, and literature, and so on. But nothing

is gained, and much may be lost, by making strict provision in the time-table for every one of these subdivisions. The hours assigned to each of the chief branches should be entered, but the proportion in which these hours are to be allotted to the various sub-branches may well be left to the teacher of the class, who will know where the greatest pressure needs to be placed, and who may rightly have his views about the "intensive" study of a particular subject for a certain period.

In the actual construction of time-tables, the chief points that call for consideration are the subjects to be taught, the proportion of time to be allotted to each, the length of the lesson-periods, and the right succession of lessons. The principles upon which the subjects of study are selected for schools of various types have been explained in a previous chapter; when we reach the point of organising a school, the list of studies will have been determined and must here be taken for granted. The next question is the distribution of time. In some countries this is entirely settled by official regulation, as, for example, in the highly organised secondary schools of Prussia.[1] In our own country, the central authority, in accordance with our natural antipathy to over-government, leaves far greater liberty to the school authority, which means in practice far greater liberty for the heads of schools. But whoever is called upon to settle the distribution of hours, there are certain principles to be taken into account. First comes the relative degree of importance attached to the several subjects. This will vary according to the general aims of the school, as conceived by those who control its destinies, and these aims will in their turn depend, in some cases upon tradition, but usually upon the future needs of the pupils. Thus on the classical side of a first grade day school more than half of the ordinary school hours are devoted to Greek and Latin, whilst at Eton and Harrow this proportion is considerably exceeded; in a second grade school, and on the non-classical sides of a first grade school, the stress is thrown upon mathematics, science, and modern

Distribution of time.

[1] See *Special Reports*, vol. iii.

languages; in primary schools, the distribution of time is, from the nature of the case, much more uniform. The second point to be considered is the relative difficulty of the several subjects. Thus a time-table may assign three times as many hours to French as to religious and moral instruction, not because the former is regarded as more important, but because more time is required for its mastery. In the third place, the distribution of hours will depend upon the stage which the pupil's general education has reached. The truest economy is sometimes practised by giving a liberal share of time to the earlier stages of a subject. Thus in the modern schools of Prussia (Realschulen and Oberrealschulen) six hours a week are assigned to French in the earlier years, this number being afterwards reduced to four. Similarly, in primary schools a much larger share of attention is bestowed upon reading and writing in the case of children seven to ten years old than in the case of older children.

Length of lessons.

The next thing to be determined by the maker of a time-table is the length of the lesson periods. On this point the verdict of practical teachers is by no means unanimous; and even if it were so, we should still do well to consult expert medical opinion, and in particular to give heed to the results of investigations on mental fatigue. In the higher schools of Prussia the official "Stunde" is a lesson of fifty minutes' duration, and it may be assumed that in English secondary schools the lesson periods do not, as a rule, fall far short of this. In primary schools it is not uncommon to find the lesson, even for children seven or eight years of age, extending to forty or even forty-five minutes. Writers on school hygiene stand aghast at these figures. They differ somewhat in their estimates, but the usual statement is that for children between six and nine years of age a lesson should not exceed ten to fifteen minutes; between nine and twelve, twenty to twenty-five minutes, between twelve and fourteen, thirty minutes; above fourteen, forty to forty-five minutes. The differences between these periods and those to be found in an ordinary school time-table, though obviously serious, are in practice not quite so great as at first sight appears, because there is usually an interval of some minutes, not indicated in

the time-table, during which books and other materials are collected or distributed, and this is especially true of large classes of young children. It may be noted in passing that, according to the experimenters on mental fatigue,[1] intervals of this kind, as well as the longer breaks in the middle of morning or afternoon school, fulfil an important function, the most favourable results having been obtained when several minutes elapsed between consecutive lessons.

Still there is here a glaring discrepancy between facts and ideals, at least as regards children under twelve. Many teachers would probably plead that frequent changes of lesson involve much waste of time, and that there is a great practical convenience in making the lessons of the same length for every class in the school. They must remember, however, that when mental work of the same kind is unduly prolonged its quality quickly deteriorates, and that in such cases inattention must probably be regarded as "nature's safeguard against over-fatigue". If grave inconvenience would ensue from making the lesson-periods shorter for the younger than for the older scholars, it is the more necessary that the work of the former should be varied in all possible ways. To require young children, for example, to concentrate their attention on arithmetical calculations for three-quarters of an hour is to make an unreasonable demand. Variety may be introduced in many ways well known to the skilled teacher—by blackboard work, questioning, change of posture, and so forth. Indeed some authorities assert "that it is not so much the instruction as the instructor who should be held responsible for the amount of fatigue produced in the course of a school-hour, and that the most carefully-devised curriculum would fail to prevent the production of severe mental fatigue if the last pound of flesh were remorselessly exacted in every subject, or too little attention paid to variety, change of posture, and other aids towards the avoidance of monotony and the promotion of interest".[2]

On the whole, we may justly conclude that no lesson, even to older boys and girls, is usefully prolonged beyond forty-five minutes. But "the most serious and most frequent cases of

[1] On this point the recent extensive literature on the subject of fatigue should be consulted.

[2] *Special Reports*, vol. ix., p. 583.

mental exhaustion from overwork seem to have been noticed amongst pupils under twelve years of age, a serious indictment considering that the years from nine to twelve are generally looked upon as those of feeblest development, particularly in the case of boys. There seems to be a general consensus of opinion amongst investigators that the hours in vogue at most schools are too long for children of this age. Thirty minutes is regarded as the limit of time during which the serious attention of children to one subject can reasonably be demanded; though with skilful introduction of variety into the lesson forty to forty-five minutes might be devoted to it without entailing too severe a strain."[1] For children in the lowest classes of primary schools the lessons should be still shorter; in the infant school lessons of twenty or twenty-five minutes' duration are nearer the mark, whilst in the "babies' class" a change of occupation should be provided every ten minutes or quarter of an hour.

Succession of lessons.

Hardly less important than the duration of lessons is the order in which they follow one another in the day's routine. Here again it is to be feared that existing practice is sadly at fault, partly because the point is often left to chance and partly because of certain prevalent misconceptions. In the first place, mere change from one occupation to another does not necessarily prevent fatigue. And this is true, notwithstanding that the pupil appears to experience a sense of relief. For we must distinguish between what the investigators call subjective and objective fatigue; or, in plainer phrase, between feeling tired and being tired. A monotonous or uninteresting occupation may make one feel tired, even when objective fatigue, which is said to be susceptible of fairly accurate measurement, is very slight. On the other hand, many an ardent student or man of business knows too well that real fatigue may, through the interest of his work or the desire to excel, be hidden until it suddenly announces itself in the form of a more or less serious breakdown.

This, then, is the first principle that should guide one in arranging lessons for the day: that if real relief is to be afforded, there must be an alternation between heavier and lighter

[1] *Special Reports*, vol. ix., p. 586.

occupations, or at least between occupations that make varying demands upon the bodily organs. We are thus led to ask whether anything can be definitely stated regarding the relative degree of strain imposed on the pupil by the several school studies. The common experience of teachers suggests certain distinctions, which are mainly, but not entirely, borne out by experimental inquiry. It seems clear that, *ceteris paribus*, the mathematical studies, exacting as they do continuous and concentrated attention, make the greatest calls on the pupil's system. It is also held by some—and here the results of experiment appear to contradict a common belief—that gymnastic exercises, at least when they involve strict discipline and severe muscular exertion, add as much as mathematics to the wear and tear of the nervous system. Foreign languages appear to be considerably less exacting than mathematics or gymnastics. Natural science, history, geography, and the mother-tongue entail but slight strain, and usually afford opportunities of recuperation; whilst singing and drawing appear to make little demand upon the nervous energies. It should be added that conscientious private study, and especially memory tasks, are among the most exhausting of mental occupations.

The working schoolmaster has to take into account other less vital though practically important points, such as the number and qualifications of the staff. But apart from incidental difficulties of this kind, there can be no doubt that results like those quoted above, in which the dictates of common sense are on the whole so singularly corroborated by a variety of physical and mental tests, should be determining factors in the construction of a time-table.

The best hours of the day are, of course, those of the morning, and of these the one following the first, when the pupils have "warmed to their work" but are not yet fatigued, is perhaps best of all. If afternoon school is held, it should be devoted as far as possible to the lighter exercises, such as writing, drawing, manual employments, reading (unless the pupil is still learning to read, in which case this is by no means a light exercise), singing, needlework, games, and physical exercises, provided these do not involve much continuous strain. Another fact of kindred significance, which, though it will not affect the arrangement of the time-table,

should guide the teacher in introducing new and difficult matter, is that the best days are the first and second after a day of rest from school work. Experiments have shown that the effect of Sunday's rest are clearly perceptible as late as Tuesday afternoon.

It sometimes happens that the welfare of the teacher, as well as that of the scholars, has to be reckoned with in framing the day's routine. When the class is large, or when the teacher is not specially robust, it is not advisable to allot consecutive periods to lessons that make exceptional physical demands upon the latter. Thus an oral lesson in geography or history, followed by a similar lesson in literature, in the giving of which so much usually depends upon graphic description or vivid narration, would from this point of view be a faulty arrangement.

REFERENCES

A. T. Pollard's chapter on "Organisation and Curricula" in Barnett's *Teaching and Organisation*, deals with some of the points discussed in this chapter from the standpoint of the secondary school; so also does Sadler's Report on *Prussian Secondary Schools for Boys*.

CHAPTER XV

THE MATERIAL CONDITIONS OF TEACHING

"The almighty wall"—EDWARD THRING.

BESIDES those discussed in the preceding chapter, there is another class of problems arising from the circumstance that numbers of children are taught together in a school—those problems, namely, that relate to the material conditions of teaching. It is no part of the plan of this book to enter at length into the technical details of school hygiene. For such details recourse must be had to special treatises written by medical and architectural experts. Still, there are certain points connected with this subject which, vitally important as they are for the pupil's welfare, and depending as they do upon easily comprehensible principles, ought to be understood by all who are concerned with education—by teachers, inspectors, and administrative officers, as well as by school architects and doctors, and by the designers and makers of school appliances. To these points we shall restrict our attention in the present chapter. It will be convenient first to regard the pupil as he sits at his desk, then to consider the room in which he sits, and lastly, to offer some remarks on school buildings in general.

The pupil's desk and bench.

The importance of the desk and bench is sufficiently manifest when one remembers that the pupil remains seated in the classroom during the greater part of every working day. There are enthusiastic and thorough-going reformers who hold that this is an altogether wrong state of affairs; that the ends of sound instruction are best served when much of the teaching is done in field and lane, workshop and laboratory, public museum and historic building. But when due allowance has been made for the hygienic effects of such reforms, and for all

other incidental changes of bodily posture, it will probably remain true that most of the child's education, at least after the earliest years, must be conducted under the somewhat artificial conditions that prevail in the schoolroom. We may, for practical purposes, assume that for some hours a day the child will be seated at a desk; and since this takes place during the years when the dangers of mal-growth are great, one need not wonder at the nice care with which authorities on school hygiene have sought to minimise this particular risk.

The desk considered, (1) longitudinally;

Let us first regard school desks longitudinally. From this point of view they may be classified as single desks, which accommodate only one pupil; dual, when accommodate two; and long, which are made to accommodate any number from three to six or seven. Long desks have been commonly used in the past, but they would not now be approved by any competent authority. They have nothing to recommend them except economy of space. Their disadvantages have led to the general adoption, in primary schools, of dual desks—a compromise between the long and the single varieties. The superiority of the dual over the long desk lies in the facts that the scholars, being more isolated, work more independently and are more easily controlled; that the teacher has readier access to individual pupils—an important matter in writing and drawing lessons; and that the pupils can more easily leave their places in order to go to the map, the blackboard, or the demonstration table. It will be seen, however, that from every one of these points of view single desks are best of all, and these possess the additional merit of checking the spread of infectious ailments. Of course they occupy more space than do the other sorts, but this would be by no means a disadvantage if it prevented the overcrowding of classrooms. To say the least, single desks ought to be used in all secondary schools; and they ought to replace dual and long desks as rapidly as possible in primary schools.

(2) vertically.

But the most important features of a school desk are brought out by the study of a vertical section. When the pupil is writing he should be able to sit with the trunk erect, the head only slightly bent forward, the fore-arm resting

comfortably on the desk, and the feet so placed on the floor that the knee is bent at a right angle. When he is reading, or listening to an oral lesson, he should be able to lean back so that the body takes an upright posture. Whether he is reading or writing the eye should be about twelve inches from the book or paper, and the line of sight should be as nearly as possible perpendicular to the page. Moreover, the child should be able to take or leave his seat at the desk without awkward movements. Now what are the points to be attended to in the construction of the desk and bench in order that these requirements may be met? First, we have to consider the height of the desk above the bench. If the desk is too high the book or paper is too near the child's eyes, and shortness of sight is induced, along with a tendency to lateral curvature of the spine. If the desk is too low a pernicious round-shouldered posture is the result. The vertical distance of the desk above the bench should allow of the fore-arm being placed on the desk without elevation or depression of either shoulder, and this distance may be taken as about one-sixth of the child's height. Secondly, the height of the seat above the floor should obviously be equal to the height of the pupil's knee above the sole of his foot. Thirdly, the bench should be wide enough to give ample support to the thigh; it is found that this requirement is met when the width of the bench is about one-fifth of the child's height. Fourthly, we have to consider the horizontal distance between the inner edge of the seat and a perpendicular dropped from the inner edge of the desk. When the pupil is writing, these edges should be in a vertical line, or should rather overlap, otherwise the pupil must assume a stooping or lolling posture. But a fixed arrangement of this kind is evidently awkward in other ways, *e.g.*, for purposes of entrance and exit; this difficulty is obviated either by a movable seat, or, preferably, by a sliding desk-top. Fifthly, we must look to the slope of the desk. It is not easy to secure ideal conditions in this respect, but it is generally agreed that a slope of about 15° is, on the whole, best. Sixthly, a support for the small of the back is a great help towards inducing a correct posture when the pupil is not writing or otherwise occupied at the desk.

When we consider the wide variations in height, even of children of the same age, and the variations in the relative measurements of different parts of the body, it is clear that the ordinary custom of making desks of fixed patterns and proportions is a bad one. Nothing will meet the case except desks which are, in certain respects, adjustable to the needs of the individual pupil. The desk should be so constructed that the height of the desk-top, of the seat, and of the hip-rest may, by the manipulation of a few screws, be properly adapted to the physical proportions of the pupil. This is no question of superfluous ease, but of preventing a greater or less degree of permanent distortion or of injury to eyesight; and the additional expense that is incurred in providing hygienic desks should hardly be allowed to count against their great advantages. At present it is not uncommon to find schools with expensively equipped gymnasiums, but with desks whose evil effects on the pupils' physical development cannot be counteracted by occasional gymnastic exercises.

Desks to be adjustable.

In what we have said about the construction of the desk for writing purposes, we have assumed that the paper written upon will be placed directly in front of the pupil, with its upper and lower edges parallel to the edges of the desk, and, as a corollary to this, that the vertical style of handwriting will be adopted. The question as between slanting and vertical script has been minutely investigated by medical experts in Germany and in America, and there seems no doubt that the vertical is in all respects the better. Not only is it more legible, but it directly favours a healthier posture. Little children who are beginning to write, naturally adopt the vertical style, and it is matter of common knowledge amongst teachers of young children that, in order to produce the slanting style, the child has to be deliberately taught to push the paper to the right, and then to assume a posture which plainly tends to spinal curvature. It must be understood that the mere adoption of the vertical style is not enough, unless it be accompanied with correct posture, *i.e.*, unless the pupil sit upright, square with the desk, and having the paper immediately in front of him as described above.

Handwriting.

Let us now turn to the consideration of the classroom in which the pupil sits for instruction. It will be convenient to take first the amount and direction of light. The best authorities are agreed that the area of window space should be from one-sixth to one-fourth of the area of floor space, the proportion depending partly upon the surroundings of the school; they also agree that the windows should be carried as near as possible to the ceiling. The lighting is regarded as defective if in any part of the room "diamond" type cannot be read at a distance of twelve inches. As to direction, it is obvious that light falling from the front dazzles the eyes of the pupils, whilst that falling from behind is similarly bad for the teacher, besides causing the pupils to sit in awkward postures so that the light may fall on their books. Light falling from the right is better, though in this case the shadow of the hand falls on the part of the paper that is being written upon. The main light should undoubtedly fall from the left, but this may, if necessary, be supplemented by a weaker light falling from the right.

The class-room.
(1) Light.

The size of the room will of course depend upon the number of pupils to be accommodated; and here we are thrown back upon the important question referred to in the preceding chapter—the number of pupils that can be properly trained and instructed by one teacher. We have seen that it is probably very near the mark to say that no teacher who understands the value of healthy emulation and vigorous corporate life would wish for a class smaller than twenty; and that on the other hand no teacher who sees the significance of individuality would willingly undertake to educate many more than forty. How disgracefully this upper limit is sometimes exceeded we need not here pause to enquire. Further, there is a consensus of informed opinion that an allowance of not less than fifteen square feet of floor space should be made for every occupant of the room. From these data, the proper size of a classroom may readily be computed.

(2) Size.

As to the shape of the room, three alternatives present themselves: it may be oblong, the pupils facing one of the long walls; or again oblong, the pupils facing one of

(3) Shape.

the shorter walls; or it may be square. The first of these is the worst of the three, because the end of the room remote from the windows is insufficiently lighted, because the teacher finds a difficulty in taking in the whole of his class at a glance, and because the blackboard and other apparatus are seen in unduly foreshortened perspective by pupils sitting on the extreme right and left. The shape which approximates to the square is on all these counts to be preferred. But as the result of careful observation and experiment, in which lighting and ventilation, the children's sight, and the teacher's voice, have all been taken into account, the conclusion has been reached that an oblong room, where the aisles between the desks run parallel to the long sides, is best of all, provided the length of the room is not greater than thirty feet. A room twenty-nine feet long and twenty-two feet wide would give to each of forty two pupils the required average of fifteen square feet of floor space.

(4) Warmth and ventilation.

The important subjects of ventilation and warming, unlike those already discussed, present few features which are peculiar to the schoolroom, and it will therefore be sufficient to refer the reader to special treatises for the details. The great objects are to keep the air of the room pure, which practically means preventing an excess of carbonic acid gas, to keep the temperature at 55° to 60° Fahrenheit, and to maintain the normal amount of moisture in the air. Unless these objects are accomplished, the ultimate effects upon the health of all concerned are highly injurious; and the immediate effects, as shown in listlessness, inattention, restlessness, headaches, and unsatisfactory work, are extremely disconcerting to the teacher. The room should afford not less than 200 cubic feet of air for each pupil, and if we allow fifteen square feet of floor space, these conditions are secured by making the room about thirteen feet high. This height is also acoustically satisfactory. It should be noted that the provision of sufficient cubic space is unavailing unless there be enough floor space, *i.e.*, when cubic space is gained by means of lofty ceilings. The height of a room beyond a certain standard is practically useless. It should be remembered, too, that even when a small class occupies a large room, free ventilation is necessary, as the air soon gets used up.

Coming now to the school, as a whole, we observe that school architecture and the planning of school buildings are no longer the simple affairs that they once were. Extensions and modifications of curricula, both in primary and in secondary schools, improvements in the art of teaching and in the status of teachers, humaner methods of control, and juster conceptions of hygienic requirements, have all helped to make the adaptation of school buildings to the varied aspects of school work an exceedingly complex problem. As modern ideas of education have made the organisation of a school incomparably more difficult than it used to be, so have they made the task of the school architect one that calls for infinitely greater resourcefulness.

School buildings.

We have advisedly placed our brief discussion of the classroom before that of the school building as a whole, because the former is undoubtedly the essential unit in school architecture. A school is before all else a collection of rooms intended for a very special practical purpose, and he who designs a school should not begin by conceiving the building as a whole, proceeding afterwards to divide it into the required number of parts. He should first study the detailed requirements, and then contrive to put the parts together, so that, whilst the imperative claims of utility are met, the total structure may not be devoid of beauty, or at least of quiet dignity. In days gone by, external appearances were too much regarded, and school buildings commonly showed, picturesquely enough, the marks of their ecclesiastical origin, though a single room was almost the only accommodation provided; whereas in our own times, though greater attention is bestowed upon the details that affect comfort and efficiency, it is often difficult, so far as external appearances go, to distinguish a school from a factory or a jail. It should not be difficult to find a mean between these extremes.

The classroom the primary unit.

A village school with one, two, or three classrooms will of course be a simple structure, and we need only remark that these rooms should fulfil precisely the same conditions as to light, warmth, and ventilation as do the rooms in a large urban school. In this country, owing to the commoner employment of qualified adult teachers in primary schools, and increasing State supervision in

secondary schools, a revolution has been quietly effected during the last quarter of a century in the structure of larger schools. The classroom principle has been adopted, the rooms generally opening out into a wide corridor, or, in the newer buildings, into a central hall. The central hall, a characteristic feature of the best English schools, has many advantages. It serves as an assembly room for the whole school, and thus promotes corporate life, which is apt to decay when the pupils never meet elsewhere than in their respective classrooms; its utility on speech days and other public occasions is obvious; and it incidentally serves as a reservoir of fresh warm air which may supplement other means of ventilating the classrooms.

Care of the eyes.

When school work is carried on under unhealthy conditions, none of the bodily organs is more apt to suffer than the organ of sight. We have incidentally mentioned some of the conditions favouring the preservation of sight in the schoolroom—those relating to the amount and direction of light, the child's posture at the desk, and the distance at which paper or book is habitually placed from the eyes. Another matter requiring the utmost vigilance is the sort of print from which the child reads: for young children, the smallest type used should be that known as pica, and in general no school book should be printed in type smaller than small pica. The lines should not be crowded together, since "leaded" type is more easily legible and therefore less fatiguing. The surface of the paper and of the blackboard should be dull, not glossy, as the reflected light is injurious to the eyes. Fine needlework is open to the same objections as small print. Slates should not be employed, not only because they lead to straining of the eyes, but also because of the dirty habits associated with them, and because they are a bad introduction to the use of pen and paper.

Every teacher should learn the mode of testing children's vision, so that he may be able to advise parents and guardians when the services of an oculist are necessary. The test-types employed by oculists, together with full directions for using them, are now easily accessible. Hearing may also readily be tested, with a

few simple precautions, by means of one's watch or by the "whispering test".

REFERENCES

Useful books entitled *School Hygiene* are those by Shaw, Hope and Browne, Newsholme, and Carpenter; also Lyster's *Hygiene for Teachers*, and Crowley's *Hygiene of School Life*. Dukes' *Health at School* lays stress on hygienic requirements in boarding schools; see also his chapter on "Health and Physical Culture" in Barnett's *Teaching and Organisation*. The chapter in the latter volume by W. K. Hill on "Furniture, Apparatus and Appliances," deals very clearly and practically with schoolrooms, desks, etc.

The subject of Open Air Schools is happily receiving much more attention than when the foregoing chapter was written; see H. Broughton's *The Open Air School*.

PART V

THE MEANS OF EDUCATION: (*b*) TRAINING

CHAPTER XVI

THE PROBLEMS OF TRAINING

"Let the history of your domestic rule typify, in little, the history of our political rule; at the outset, autocratic control, where control is really needful; by-and-by an incipient constitutionalism, in which the liberty of the subject gains some express recognition; successive extensions of this liberty of the subject gradually ending in parental abdication"—HERBERT SPENCER.

Instruction an important means of education, but not the only means;

IN our opening chapter we saw reason to believe that the ultimate purpose of all educational measures is most fruitfully conceived as the formation of character. The all-inclusive purpose may sometimes be disguised, and in our treatment of the material and methods of instruction we may seem at times almost to have lost sight of it. But, having emerged from the mass of detail relating to the didactic art, let us now remind ourselves that the constant and effective pursuit of a lofty aim does not require that we should be continually making a parade of that aim. Though we have not been careful at all points to make explicit reference to the essentially moral significance of the problems of instruction, even the smallest of them, our exposition has been a failure unless it has on the whole made good the proposition that all subordinate aims will inevitably fall into their proper places, provided instruction seeks faithfully to realise its highest aim—that of enriching and ennobling the pupil's life, by developing and expanding his interests.

But instruction alone is notoriously insufficient. It is much to have opened out to the pupil a wide universe of worthy objects of desire and to have shown their worthiness, but these results are not enough. There falls to us the collateral task of so training him that he may prefer to live in the universe to which we have

thus introduced him. Though he may have acquired, as a result of his school career, intellectual and æsthetic interests that tend to lift his life to an exalted plane, we have yet to reckon with the thousand-fold temptations that inevitably await him to "reel back into the beast". We may admit to the full the moral significance of sound instruction, on the ground that the interests evoked have a certain expulsive power over the baser propensities of human nature, but we must be on our guard against over-estimating that power. We must, in fact, do all that can be done, not only to give the pupil an insight into what is best, but also to establish such relations between the higher and lower elements of his nature as will conduce to firmness of purpose in choosing the best. As was pointed out in an earlier chapter, the influence of the day school in this matter is far inferior to that of the home, and the best of schools can probably make little headway against distinctly adverse home influences. Similarly, the day school enjoys fewer opportunities of direct moral training than does the boarding school—a fact which explains in part the marked contrast between the traditional ideals of English and of German secondary education.

even when it includes specifically moral instruction.

We need, perhaps, to emphasise the importance of direct moral training, as distinguished not only from that indirect fashioning of the will which a sound course of general instruction involves, but also from specific instruction *about* morals. For there doubtless exists in some quarters a tendency to place too much reliance upon the latter. The advocates of definite moral instruction are apt to quote with approval the paradoxical saying of Socrates, that virtue is a kind of knowledge. But they should remember that though in his doctrine Socrates placed the stress upon fulness of insight, yet in his own life the necessity of a firm purpose was "all the more conspicuously manifested," and that it was probably the very perfection in which he possessed the latter quality "that led him to the paradox of ignoring it. Of himself at least it was true, that whatever he believed to be 'fair and good' he must necessarily do; and when another acted apparently against knowledge, the easiest explanation seemed to be that true knowledge was not

really there."[1] The bald statement, however, that virtue is knowledge and vice is ignorance may easily give rise to grave misunderstanding. It must be supplemented by Aristotle's doctrine that virtue is a trained faculty or habit. "Perfect virtue necessarily follows from perfect practical wisdom or moral insight *if actual and operative*."[2] Now "this actuality of moral insight is not a function of the intellect only, but depends on the establishment of a right relation between the intellect and the non-rational or semi-rational elements of the soul; and . . . accordingly, for education in virtue mere verbal instruction is less important than careful discipline applied to minds of good natural dispositions."[3]

The raw material of character.

Before passing to the consideration of the teacher's function as moral trainer, it will be profitable to ask what manner of person the average child is, before he enters upon his school career. We need not pause to examine the cheery optimism of those who, like Rousseau, regard the child as compact of all that is good; nor the dreary pessimism of those who, on theological and other grounds, place the emphasis on his perversity and depravity. Sober and unbiassed observation reveals childhood as a mixture of what are, from the on-looking adult's point of view, both good and evil tendencies. From the *adult* point of view, let it be noted; for the small child's acts are the results of instinctive impulse, not of deliberation and voluntary choice; and so they are, properly speaking, neither moral nor immoral, but simply non-moral, since the idea of morality attaches only to acts that are deliberately willed. All that we have a right to say is that some common childish tendencies are seen by *us* to be favourable, and others to be unfavourable, to the development of a virtuous character. These tendencies have been happily distinguished as pro-moral and contra-moral, in the sense that, if persevered in when the age of reflection arrives, they make for virtuous and vicious dispositions respectively.[4] In the former category we place the child's apparently instinctive desire for the good

[1] Sidgwick, *History of Ethics*, pp. 26,27.
[2] *Ibid.*, p. 54. [3] *Ibid.*
[4] Sully, *Studies of Childhood*, p. 229. Chapters vii. and viii. of Dr. Sully's book are well worth study in the present connection.

opinion of others, and his sympathetic impulses, which in a rudimentary form are very early manifested. In the latter category we place those native inclinations which possess the common mark of being self-centred and anti-social. The most ardent lover of children cannot but admit the propensity of the average specimen towards outbursts of anger, greed, envy, jealousy, and even cruelty —or rather towards acts which, if persisted in to a later period, would be rightly called by these ugly names. We must repeat, however, that the moral judgments implied in these names are not to be passed upon the acts of a child, in the same sense as that in which they are passed on the acts of adults. What we are apt to call cruelty in the child's treatment of kittens and flies is rather to be ascribed to lack of knowledge and imagination, to an insatiable curiosity, and to a boundless activity.

Habits and their limitations.

Out of this primitive material, with its mixture of promising and unpromising elements, strangely inconsistent with one another, and variously compounded in individual children, a character of some sort will eventually be shaped; and the task of the educator is to cultivate the favourable, and to check and moderate the unfavourable, so that the former may tend to become the governing principles of the child's life. This task is sometimes formulated in terms of habit. In so far as we tend to become "mere bundles of habit, . . . stereotyped creatures, imitators and copiers of our past selves, . . . the teacher's prime concern is to ingrain into the pupil that assortment of habits that shall be most useful to him throughout life".[1] This advice is excellent, so far as it goes, but it does not go far enough. Allowing that nine-tenths or more of one's daily life may thus be handed over to the "effortless custody" of good habits, there remains a momentous margin of novel situations, before which a creature of mere habit would stand helpless. This margin always exists, but it is, of course, widest at certain critical periods of life when great changes are afoot. A youth may have formed an excellent set of home and school habits, but if these are all his moral stock-in-trade, he may fail miserably when he enters upon the freer life of college or of the world of business. Life is at all points too complex an

[1] James, *Talks to Teachers on Psychology*, chap. viii.

affair to be worked by machinery; and so "a perfect character will combine promptitude and even an impatience of reflection, in cases allowing of, and calling for, rapid and partially automatic responses, with . . . a readiness to pause and reflect as soon as new features, and especially an unfamiliar complexity, present themselves ".[1] The gospel of habit must include "the habit of constantly rehabituating oneself ".[2]

What we have to aim at, then, in our direct efforts towards the formation of character is, in the first place, to train the child to good habits, among which the habit of obedience must take high rank, for, as Miss Martineau says, this is a necessary preliminary to the formation of all other habits; and, in the second place, to give the child as many opportunities as he can bear of choosing for himself between alternative courses of action, in order that he may be trained to act rightly in the more complex situations of life. Now, as we have seen, the raw material of voluntary action lies in certain native and instinctive tendencies which do not at the outset possess any moral quality at all. To the inexperienced and untrained child, there is no reason why asking should be preferable to seizing or snatching, eating plain food to eating sweetmeats, taking his own to taking another's, neatness to untidiness, order to disorder, knowledge to ignorance. His impulsive tendencies are at least as likely to lead him wrong as right. Hence the necessity, in the early years, of imposing our will upon him, of keeping him on the straight path by the exercise of arbitrary authority and by insistence upon obedience. The native impulses must be transformed into desirable habits, though the process may, at times, be somewhat meaningless and unpleasant to the child himself. This aspect of the process of training may be distinguished as *government* or *control*.

Government.

At the same time, we have ever to keep in mind the child's destiny as a self-governing being. In a few years at most he will be emancipated from the control of

Guidance.

[1] Sully, *The Human Mind*, vol. ii., p. 287.

[2] See MacCunn, *The Making of Character*, chap. vi., where the limitations of habit in the development of character are clearly pointed out.

teachers, and even of parents, and he must, therefore, be trained betimes to "walk without leading strings and swim without bladders". This difficult part of the business of education may usefully be marked off as *guidance*. Manifestly the distinction between government and guidance is fairly well marked. According to writers of the Herbart school, the one works for the present the other for the future; the one aims merely at keeping order, the other at truly forming character by enlisting the will on the side of order; the one is concerned with the child's conduct before, the other after, moral insight has been attained; the one begins before formal instruction and prepares the way for it, the other begins later than the beginning of instruction; the one is the chief agent in the training of little children, and should give way to the other in the case of older children; the measures of the one are short and sharp, those of the other slow, persevering, and continuous; the one subdues, the other moulds; the punishments of the one need have no obvious relation to the offence, except that of proportionate retribution, whilst those of the other avoid the positive and arbitrary, and depend as far as possible upon the natural consequences of the act.

Perhaps, however, this series of distinctions is somewhat too sharply drawn; or rather, though the distinctions may be logically defensible, the pointed antitheses in which they are set forth are apt to lead the educator astray in his actual practice. It is true that the measures of government are sometimes quite arbitrary, as when a child is being saved from the dangerous and possibly fatal consequences of his ignorance. At the same time this early control should, as far as possible, even in the first years of life, be made morally educative. The same measure—a punishment, let us suppose—may contain the elements of both government and guidance as here contrasted; it may, to a certain extent, be arbitrarily forced upon the child, but he may, at the same time, to some extent fall in with it, through a dim perception of its reasonableness. The "discipline of natural consequences," in favour of which Spencer pleads so vigorously, and which will demand closer scrutiny in the next chapter, can be applied only to a very limited extent in the earlier years of childhood, but even

then it should be preferred to arbitrary measures whenever it is practicable.

Speaking broadly there are two ways in which the direct moral training discussed in this chapter is carried out by the teacher. He exercises the authority vested in him for the definite regulation of the pupil's conduct; and he exercises a more or less strong and healthy personal influence over his scholars. To some practical considerations connected with these spheres of the teacher's activity the next two chapters will be devoted.

REFERENCES

The distinctions drawn in this chapter between training, government, and guidance (or discipline) answer to distinctions which are familiar to readers of Herbart and his followers. See Rein, *Outlines of Pedagogics* (Eng. trans.), pp. 163 *et seqq.*; Felkin, *Introduction to Herbart*, chap. iv.; Herbart, *Science of Education*, bk. i., chap. i., and bk. iii., chap. v.; Findlay, *op. cit.*, pp. 14-16.

CHAPTER XVII

THE AUTHORITY OF THE TEACHER

"'Pas trop gouverner' is a good rule in education as in politics"—JEAN PAUL RICHTER.

The educator's position as moral authority.

DURING school hours the child is handed over to the care of the teacher, who is not only responsible for giving instruction, but also stands *in loco parentis* in the regulation of the child's conduct. Precisely how far the schoolmaster's authority shall in certain respects extend, is partly a matter of law and custom, and so varies from country to country and from age to age. On the question of corporal castigation, for example, a Frenchman's sensitiveness is unknown, or at least uncommon, in this country; and even in this country it is a long step from Busby to Arnold. Apart from such variations, however, the authority of the teacher is a constant and a potent factor in the educational process; and the position which he thus shares with parents is, if rightly understood, at once inspiring and humbling. Until the time arrives when obedience to the moral law is yielded in response to an inner voice, supported perhaps by religious sanctions, the teacher stands as the visible embodiment of that law. Little by little, as the child's education proceeds, the voice of that complex something which we call conscience will, under a proper system of training, prescribe rules of conduct, and mete out praise and blame, reward and punishment. Meanwhile, the educator himself must inevitably, according to a principle which prevails not less in the moral than in the intellectual sphere, represent concretely what will later take on a more abstract form. The educator, whether parent or teacher, stands provisionally as the source of moral law and of moral sanctions.

The authority thus vested in the teacher has to be exercised

by him with a view to moderating the spirit of disorder. The elements of that spirit exist, as we have seen, in certain of the child's native impulses; impulses which, though they do not point to a vicious disposition, since they do not issue from a bad will, would still, if allowed to run riot, place an effective check upon the educative influence of instruction and guidance. When, however, we speak of introducing the spirit of order into the child's life, we must not be understood to mean that he should be reduced to a state of dumb, abject submission. The sort of order aimed at should be just that which is necessary to make the work of instruction proceed smoothly, and to render operative the silent influence of the teacher's personality, for, beyond this point, order becomes stagnation, if not something worse. It now remains for us to examine those measures to which the teacher may resort in curbing the wilder and more impetuous of the child's propensities.

Expedients of government:—(1) Constant employment.

First among these we may place the expedient of keeping the child well and suitably occupied. There is much wisdom in the saying, "Satan finds some mischief still for idle hands to do". Incessant activity is a law of the child's being; and the first requisite of a wise system of control is that this activity should be directed into desirable channels. Prevention is here certainly better than cure. The teacher of very young children generally learns this lesson betimes; but the maxim applies quite as forcibly at subsequent stages. One of the best pieces of practical advice that can be given to the worried teacher of a troublesome class is—prepare your work beforehand with such nice care that you know at every moment precisely what is to be done next. The brief interval during which he has "nothing to do" is the golden opportunity of the lively and mischievous pupil. Not only during the hours of work, however, but also during those of relaxation, the pupil should be kept appropriately occupied, for he is otherwise likely enough to find undesirable ways of employing his time. This is one of the great arguments of the advocates of athletic games, and its soundness, so far as it goes, cannot be questioned. It should be remembered, however, that the more violent forms of exercise are not suitable for all alike, and so boys and girls who cannot

take an active part in football or hockey should be encouraged to occupy their time in other healthful ways. The boy who prefers to spend his leisure in some mechanical occupation, or in undertaking long walks, or in making natural history collections, should be encouraged, and not despised as a milksop.

(2) Close supervision.

Another requisite of a good system of government is that he who governs should be a vigilant observer of his charges. "Begin betimes," says the sagacious Locke, "nicely to observe your son's temper, and that when he is least under restraint, in his play, and, as he thinks, out of your sight. See what are his predominate passions and prevailing inclinations; whether he be fierce or mild, bold or bashful, compassionate or cruel, open or reserved, etc. For as these are different in him so are your methods to be different, and your authority must hence take measures to apply itself in different ways to him." And as with the parent so with the teacher. No teacher can study too carefully or can know too well the individual characters of his pupils.

How far he should by his interference make the children aware of his watchfulness is another question. Under some circumstances—when, for example, a child is exceptionally turbulent, or shows signs of developing a grave moral fault—it is no doubt well that he should know that a vigilant eye is upon him; though even then we must avoid treating him as a suspect and causing him to weigh the chances of detection. As a rule, however, the child should not be conscious of being closely supervised, for the mere presence of a teacher who is regarded with respectful affection will be enough of itself to check disorder.

(3) Commands.

But when all is done that can be done to keep the child well occupied, and to keep a watchful eye upon him, occasions will inevitably arise when the educator must issue definite and specific commands. These occasions will be numerous in the early stages, but should gradually become fewer as the years advance. The nursling might come to serious physical or moral harm many times in a single day, did he not receive definite directions as to his conduct; but if this kind of treatment is equally necessary in deaing with a child of twelve,

something has gone wrong with his education. By this time he should have learnt to some extent to direct his own conduct; and if he has not done so he has probably been over-governed. Let us consider how this part of early government should be managed, so that in the later years of childhood it will have helped towards its own abolition.

First, let commands be limited to the smallest possible number. The teacher or parent who is continually giving minute directions about the smallest details of the child's conduct is simply reducing the latter to a condition of moral helplessness.

(a) Should be few;

Secondly, it follows from the above that it is a bad plan to repeat one's commands unnecessarily. To give an order once should be enough: frequently to give it a second time is to lead the child to expect the repetition, and to beget a habit of hesitating obedience.

(b) given once for all,

Thirdly, having reduced our commands to the smallest possible number, we must next see to it that when we do command, we do so with firmness and decision. An irresolute manner, a note of doubt in one's voice, and above all a weak asking or begging that the thing shall be done, will speedily be interpreted as an invitation to canvass one's authority. The educator who would gain obedience must show that he expects it, and that the possibility of its contrary is in his view so remote as not to have entered into his calculations.

(c) and with decision;

Fourthly, firmness and decision in giving an order must be held to imply that the order has been properly considered before being given. In most cases, the teacher will be so sure of his ground that hardly a moment's thought, if any at all, will be necessary; but when the circumstances are unusual they should be carefully weighed before the decisive step is taken. It is demoralising to have to revise or cancel one's commands.

(d) well considered before given;

Fifthly, let a command assume the positive rather than the negative form. "Do" is a far better word of command than "don't," especially when the latter anticipates an act that may never have been performed at

(e) positive rather than negative:

all. Those advertisers who send sandwich-men through the streets bearing the frontal inscription "Don't look at my back," display a practical knowledge of human nature. Here as elsewhere the great thing is to take advantage of the principle of suggestion,—to suggest the right course, and to refrain from suggesting the wrong one.

(*f*) general rather than particular.

Sixthly, as a corollary to our first maxim, that commands should not descend to unnecessary detail, we may add that they should be general rather than particular. Some children who were visiting a relative were informed by the latter that there were certain faults which she could not tolerate, among which were untruthfulness, disobedience, untidiness, and so on. When the children on their return home repeated this to their mother, she quietly replied: "That is all very right and proper, but if you make sure of one thing it will save you from all these faults: in all you do, *be sensible*". There is a world of wisdom in this simple saying. As far as possible and as soon as possible, our multitudinous special requirements—speak the truth, don't take what is not your own, be clean and tidy, don't speak rudely, don't plant your elbows on the table or put your knife in your mouth—should all be merged in the inclusive demand: act with good sense.

(4) Rules.

A rule of conduct is a sort of permanent command; it is a standing order of the home or school authority. The same remarks that have been made concerning commands apply therefore to rules. They should be as few as possible, indicating, not all that is expected of the child, but only what is required in certain cases where misunderstanding is likely to arise. They should, moreover, be well thought out beforehand, and then expressed with perfect clearness. Under these conditions, the rules of a school may well promote the ends of good government. It should always be remembered, however, that the purpose of rules is the ultimate abolition of rules.

(5) Punishment.

The measures of control we have so far considered are all of the preventive sort. We now pass to those repressive measures summed up in the word punishment. A punishment we take to mean the intentional infliction of pain of some sort, as a consequence of some special offence against the laws, written or unwritten, of a school or other community. In

a school it may take the negative form of withholding some expected pleasure; or one of various positive forms, such as the imposition of tasks and bodily chastisement. The bare enumeration of the different forms of punishment is enough to convince one that, considered in itself, and without reference to its ultimate significance, punishment is a bad thing; since it tends to weaken the bond of sympathy between teacher and pupil, parent and child. It is the last resort of flouted authority. Frequent punishment is therefore a sign of weak government. When all other means often fail, the reason must be that those other means are feebly or fitfully exercised.

Aims of punishment.

Three views are commonly put forward as to the proper aim of punishment; (1) the preventive, deterrent, or exemplary; (2) the corrective or reformative, and (3) the retributive. According to the first the purpose of punishment is to deter others from committing a like offence; according to the second, it is to reform the offender; according to the third, it is to cause the offence to recoil upon the offender's own head. How far these different views enter into a just conception of the punishments inflicted by magistrates and judges we need not here consider at length. In the history of nations, the earliest form of punishment is that of unregulated private revenge; later, the idea prevails that the crime has been perpetrated against society, and revenge becomes regulated, but it is still revenge, and so punishments are apt to be needlessly severe; lastly, "in the most enlightened ages, the infliction of vengeance on the offender ceases altogether to be the aim of punishment, the object of which is now regarded as simply confined to taking necessary precautions for the security of the community, those precautions including the reformation of the offender himself".[1] It should be added, however, that though the notion of crude vengeance disappears, yet that of just and proportionate retribution remains, and is indeed essential, if punishment is to reform the offender and to act as an effective check on others.

From the educator's standpoint, too, there are elements of truth in every one of the three views above enunciated, though

[1] Fowler, *Principles of Morals*, vol. ii., pp. 134, 135.

he will place the stress differently. His prime object is doubtless the reformation of the offender. But if the offender is a member of a school society, where order has to be maintained and work carried on, the educator will look also to the deterrent function of punishment. This idea must not, however, be pressed too far; since "making an example" of a pupil may easily lead the teacher to the infliction of punishments quite out of proportion to the offence. The reformative and preventive views must, in short, be supplemented by the retributive. The law of the school society has been broken, and must be vindicated; and this vindication, if it be effected by a punishment suitable in kind and degree, will tend at the same time to reformation and prevention.

Appropriateness of punishments.

But what is the test of the suitability of a punishment? Rousseau declared "that punishment must never be inflicted on children as punishment, but that it ought always to come to them as the natural consequences of their bad acts";[1] and Spencer, in his well-known essay on "Moral Education,"[2] works out this thesis with all his accustomed vigour of expression and felicity of illustration.

Theory of "natural consequences."

Spencer points out that the child who thrusts his finger into a candle-flame, or runs his head against the table, has been taught by Nature a lesson that he is not likely to forget. It is characteristic, he proceeds, of Nature's lessons that they directly connect right-doing with pleasure, and wrong-doing with pain; that they are inevitable, not artificially invented to meet the case; that they are nicely proportioned to the offence; that they are constant and unhesitating, and that they hold all through life. He infers that parents and teachers should take a leaf out of Nature's book, instead of constituting themselves Nature's proxies; in other words, that punishments should be the "natural" outcome of offences. If the child persists in making a litter, he must be refused his toys; if he is habitually late for his walk, he must be left at home; if he breaks or loses his toy or his knife, he must suffer the inconvenience of doing without it. When we come to more serious offences, Spencer seems to admit that the difficulties are greater, but he

[1] *Emile* (trans. Payne), p. 65. [2] *Education*, chap. iii.

argues that they are not insuperable. The natural consequences of a theft, for example, are of two kinds, direct and indirect; the direct consequence is that of making restitution, and the indirect and more serious consequence is the grave displeasure of parents.

Critical estimate of its value.

In estimating the value of this theory, we observe, in the first place, that the advantages it attributes to Nature's punishments are by no means so evident as we are led to suppose. So far from being nicely proportioned to the offence, they are notoriously uncertain in this respect. To the child who rashly starts running down a steep hill, Nature may mete out any punishment between grazing his shins and breaking his neck, or he may escape scot-free. Moreover, though these natural reactions are perhaps "constant" and "inevitable" in the long run, yet they may be so slow and insidious in their on-coming as to be of little or no disciplinary value: the consequences of defying the laws of health, for instance, are in general too remote to count for much in the training of the juvenile delinquent.

The truth is that this whole theory of punishment by natural consequences is another illustration of the fact, well known to students of philosophy, that the word Nature is a slippery one, requiring careful handling if we would avoid fallacious argument. There is a confusion here between (1) the reactions caused by the blind forces of Nature, which, as we have seen, are anything but a safe guide to the educator, and are, indeed, no punishment at all, in the sense in which we have defined the term; and (2) those punishments which, avoiding the arbitrary and preferring a penalty that is the analogue of the offence, are in this sense the "natural" outcome of the offender's act. It is one thing to punish greed by deprivation, late-coming by late-going, and idleness by extra work; it is another thing to leave a child to the tender mercies of the candle-flame or the law of gravitation, in order to teach him prudence.

Bentham's canons of punishment.

The truth contained in the theory of "natural reactions" is, then, that the punishment should, as far as possible, fit the crime. After all, however, this is only one of several conditions which a well-devised system of punishments ought to fulfil. These conditions, so far

as they affect public legislation, have been stated once for all by Bentham, and as some of his canons are equally applicable to school and family government, a summary of them will not be amiss. First, punishments should be *proportionate* to the offence, and to this end they should be susceptible of degrees of intensity and duration; moreover, a fixed punishment for a given offence is not altogether wise, since the circumstances of the act and the sensitiveness of the culprit are varying factors. It is clear that corporal punishment, detention after school hours, fines, and censure are all susceptible of variation. Secondly, the punishment should be "*characteristical*," *i.e.*, its idea should fit the offence as far as possible, in order that it may the more effectively go home to the offender. This, as we have seen, is the truth contained in the theory of natural consequences. The maxim is a sound one, so far as it goes, but it is not so applicable in early as in later childhood. Furthermore the maxim does not seem to touch the more serious offences. Even Mr. Spencer admits that "during infancy a considerable amount of absolutism is necessary". Thirdly, a punishment should be *exemplary*, both in itself and in the manner of its administration. Whether, however, a punishment should involve the additional stigma of being administered publicly is a question that must be left to the discretion of the educator. Fourthly, punishment should be *economical*, involving as little as possible of inconvenience to the educator, and not exceeding the amount necessary for duly impressing the culprit and other possible culprits. Fifthly, it should be *reformative*, *i.e.*, it should tend to weaken the baser instincts and to strengthen the better ones. This is best ensured by making the punishment "characteristical," and by administering it in no spirit of vindictiveness. Sixthly, it should be *compensatory*, so that the offender may, as far as possible, repair the mischief he has done. Lastly, it should be *popular*, *i.e.*, it should be recognised by all as just. A fatal mistake has been made when public sympathy lies with the wrong-doer, unless, indeed, the tone of the school has descended to a low level.

Our discussion of the canons of effective punishment naturally

leads us to consider the various forms of punishment which have become customary in schools. Some of these involve a greater or less degree of shame or disgrace, whilst others carry with them, in addition, some amount of bodily pain or discomfort.

Forms of punishment.

(1) Reproof.

Simple *reproof* should be sufficient in the vast majority of cases, where healthy relations exist between teacher and taught; and it is a great part of good government to know exactly when and how to use this weapon. That fine tact and discrimination are needed is clear, since a rebuke may assume any form, from a mild word or even a slightly altered manner, to the severest public "wigging". Young teachers should learn in advance the importance of economy in administering reproof. Suppose, for example, that a boy is inattentive to his lesson. The clumsiest plan one can adopt is to stop one's explanation or narrative, for the purpose of calling the offender to order, and perhaps of warning him of the consequences of persistence. The clever disciplinarian will not bring his heavy artillery into action upon such slight occasion. He will probably fix the culprit with his eye, which is often a more potent instrument of government than the tongue; or he will suddenly put the boy a question, or set him on to read or construe, or ask him to come to the front and point out a place on the map. The average boy will readily comprehend the teacher's motive. To be sure, mild words or looks will not always meet the case. Occasions of righteous indignation must needs arise, and then a severe rebuke will be in place. Whether this shall be administered publicly or privately is largely a question of tact, depending on the nature of the offence, the age of the pupils, and the temperament of the boy concerned. Especially does this line of remark apply to the reproof sarcastic. The gentle note of irony that raises a good-natured laugh at a bungler's expense is, of course, generally permissible; but the more biting tone of ridicule, meant to disconcert an ill-behaved scholar, must be sparingly adopted. The teacher who goes further than this, resorting to sneers and cutting sarcasm and ill-natured epithets, has probably mistaken his vocation; the boy feels that the teacher has taken a mean advantage of his position, and so farewell to

sympathy and confidence, if, indeed, it could ever have existed! Finally, the young teacher may be warned that general scoldings, since they do not sufficiently touch the real offenders, and are unjust to the rest, are worse than useless. Occasionally they may do some good, as, for example, when a collective physical exercise is being carelessly performed; but, as a rule, they resemble nothing so much as aimless firing into the air.

(2) Positions of disgrace.

Being compelled to assume *a position or posture of disgrace* is an effective punishment for refractory members of junior classes. Provided the frequent use of coarser measures has not dulled his sensibility to the lighter penalties, a young pupil will sufficiently feel the disgrace of being made to stand in a corner, or on a bench, or with his back to the class. In former days it was customary to cause children to assume unnatural and painful postures (*e.g.*, to hold a book or other heavy object over the head); but this is corporal punishment of the worst kind, and is happily unknown in a modern schoolroom. The point of the sort of punishment we are here considering must lie rather in its appeal to the sense of shame. But another old practice, that of labelling the culprit with an uncomplimentary epithet, goes too far in this direction, because it is a pretty sure way of diminishing his self-respect.

(3) Loss of marks.

The system of *marks* for conduct, taking the form either of deducting good marks or of giving bad ones, is employed by some teachers. Satisfactory results are said to have been obtained by crediting each pupil with a certain number of marks at the beginning of the term, from which deductions are made for misbehaviour. Where bad marks are given, an accumulation of them is usually compounded for by a single penalty of a more serious sort. A really strong teacher would probably have little or nothing to do with the system, because of its somewhat peddling character. There is obviously a special danger lest the details of the pupil's conduct should become the subject of a species of bargaining.

Detention after school hours, or during recess, is applicable to a large number of the common faults of schoolboys, and seems to satisfy most of the conditions of effective and suitable

punishment, except that, since it necessarily involves careful supervision, it is apt to be inconvenient to the teacher himself.

(4) Detention with or without tasks.

Compulsory stillness and silence during the period of detention is the "characteristical" penalty for unlawful whispering and talking; whereas unpunctuality and laziness (which, however, usually means being busily engaged upon the wrong thing) will be most suitably met by requiring the defaulter to make up the lost ground. Along with detention we must, therefore, consider *Impositions* or *Tasks*—a time-honoured mode of punishment. Most people would agree that a corresponding task is the appropriate set-off against failure to prepare work that has been prescribed. The objection that study is thus surrounded with unpleasant associations does not appear in this instance to have much force. We have admitted, nay, urged, that school work should be made interesting and pleasant; but we have also emphasised the distinction between work and play. The boy must learn what duty means; and when he has "deferred the task, in smoother walks to stray," he must be taught to recognise the voice of the "stern Law-giver".

But when tasks in the form of "lines," for instance, are imposed for all manner of offences besides idleness and inattention, the case is manifestly altered. The punishment is no longer "characteristical," but purely arbitrary; and the chance of any branch of study becoming a source of abiding interest is certainly not improved by employing it as an instrument of punishment. (To meet rude or deceitful conduct by requiring the offender to write or learn fifty lines of noble poetry is a good deal worse than cutting blocks with razors.) (The acme of incongruity in this regard was perhaps reached when, in the older universities, the breach of a college rule was punished by "extra chapel"!) Now, if a teacher thinks it best to impose tasks for misconduct of various kinds, he is not reduced to the necessity of sacrilege, or of committing an outrage upon Milton or Virgil. He should rather choose tasks which, though not useless, are inevitably mechanical, and have perhaps little connection with ordinary school work. The latter will then shine by comparison. For the purpose in question, the neat transcription of a page of the dictionary

is preferable to that of a page of the *Æneid* or of *Paradise Lost*.

(5) Fines.

The subject of *fines* as a mode of school punishment need not detain us. The authenticated story of the girls who occasionally resolved to "have threepenny worth" of conversation at prohibited times will serve in place of a serious discussion.

(6) Corporal punishment.

We come now to the vexed question of *corporal punishment*. In discussing this it will be well to clear the ground by pointing out that the savage and vindictive castigations, so common in the not remote past, are now by universal consent abandoned. "For every mistake in the multiplication," wrote the late Archdeacon Farrar, "for every slip in an 'Arnold's Exercise,' for every bad piece of construing, the formula used to be, 'Hold out your hand'; and there followed an excruciating blow across the tender part of the palm. In my early school-days, I have, as an everyday matter, seen backs scored with red and blue weals, which, in these days, would secure, in favour of the most mischievous street arab, a verdict in any police court." Farrar quotes, too, the grim saying of Lord Lawrence: "I was flogged every day of my life at school except one, and then I was flogged twice". But the school, like other social institutions, including the family itself, has felt the humanitarian tendency of the age, and mere brutality is recognised, not only as useless—because, however well-meaning, it overshoots its mark—but also as criminal. To object to corporal punishment on the ground of its cruelty is therefore to beg the question; it need not and must not be cruelly administered. So far all are agreed. Every one will agree, too, that the entire abolition of bodily chastisement is the ideal to be aimed at. No boy enjoys being caned, and no man who is fit to be a teacher regards the caning otherwise than as a disagreeable expedient, whose only possible justification is that it helps to secure some ultimate good. Pain for pain's sake is an outworn creed, and we should all agree that, if it were possible, not only corporal punishment, but also the milder punishments we have above considered, should be banished from the school. The only question that remains, therefore, is whether, even when its administration

is hedged round with all reasonable restrictions, corporal punishment can be justified. Those who advocate its entire abolition make much of its degrading effect upon the boy. The usual answer to this is a bare denial that he does feel degraded; but the true reply seems to be that if the boy does not experience a sense of degradation, the punishment loses its moral significance and is of no avail. That the wrong-doer should feel disgraced is precisely the teacher's object, and this object is attained only when flogging is rarely resorted to and humanely carried out, so that the whole school feels its justice. Opponents of the practice allege also that corporal punishment appeals to the wrong sort of motive, and is therefore of no moral value. It must be admitted, indeed, that the utmost result to be expected from any sort of punishment is mere external order. But this result is of no small consequence. For the whole meaning and purpose of all exercise of authority, whether in this or in any other form, is that the wayward impulses that make for disorder, and render teaching difficult or impossible, shall be restrained. It is true that corporal punishment, like the rest of the measures of authority, should, even in the worst cases, have only a provisional and transitory place in the boy's training, but such a provisional stage of his development has nevertheless to be practically reckoned upon.

We conclude, then, that the right to inflict reasonable corporal punishment should be vested in at least one responsible master in every school. Doubtless a great deal turns on the ambiguous word "reasonable," and upon its interpretation opinions may differ. Still it is not difficult to point out certain plain conditions. The right is unreasonably exercised when the rod is employed frequently and for all manner of offences. The chief danger of the *argumentum ad baculum* lies in the fact that it is always ready and immediately effective. To use Locke's phrase, it is "the lazy and short way" of government. It should be employed only for the worst offences—for flat disobedience, obstinacy, and vice—and even for these only when there appears to be no alternative. The miscellaneous slaps of the unwise mother or nurse, and the frequent taps and stripes of the teacher who always has the cane at hand, are equally to be condemned. In the next place, he

who would avoid the danger of punishing unreasonably should impose upon himself a strict rule never to punish in a hurry. The moment of extreme irritation or of anger is precisely the moment when one is liable to administer punishment vindictively and excessively. Nevertheless, the punishment should not be delayed so long as to appear a cold-blooded vindication of offended law. The child defers, not to abstract law, but to the person in whom law is embodied, and he should feel that his punishment is the outcome of that person's just indignation. Again—it is well to insist on these details—the castigation should not be inflicted with a hard unyielding instrument; and no blow, even with the hand, should ever fall on the culprit's head. The old-fashioned box on the ears cannot be too strongly condemned. Lastly, the punishment should, as a rule, be inflicted privately. There is then less danger that the boy may lose in self-respect; and no danger of his assuming an air of bravado and mock heroism.

The subject of punishment naturally suggests that of rewards.

Rewards.

As punishment is the deliberate infliction of pain for special demerit, so is a reward the giving of pleasure for special merit. Of course, the chief reward of all, a still and quiet conscience, comes without our intervention. The rewards commonly bestowed fall roughly into two classes,—those which do and those which do not take a material shape. Of the former, gifts of books and of money are the usual types; whilst the latter may take the form of praise, or of marks for good conduct or meritorious work, or of more or less important positions of honour and trust. It is sometimes objected to all rewards that, appealing as they do to the ambitious impulses, they lead to jealous rivalry; that they substitute a lower for a higher motive; that they "make a merit of superior natural gifts"; and that in any case they can influence only the few who have the greatest chance of obtaining them. To the first objection it may be replied that the ambitious impulses have their good as well as their bad side; and that the instinctive desire to excel, provided it be kept within moderate limits, may surely be as harmless a spur to success during school life as it undoubtedly may become in after years. The second objection, that an inferior is

substituted for the best motive, must be allowed. But the whole theory and practice of the exercise of authority rests upon the patent fact that the highest motive is not always available. The wheels of school life would certainly run smoothly, if every child were prompted by an inner sense of duty to habits of neatness and punctuality and industry. The facts, however, are against us, and so the teacher is fain to cultivate these desirable habits by making temporary appeal to motives that are not the highest. As a matter of fact, all these objections depend for their force entirely upon the way in which the system of rewards is administered. To this point we must, therefore, give some attention.

Conditions of their effectiveness.

The cardinal principle of any good system of rewards is that it should not serve the merely temporary purpose of securing good conduct on a particular occasion, but that it should take account of permanent effects on character: in other words, a reward should be an instrument not only of government and control, but also of training. It follows that a reward should generally be given for a prolonged series of efforts rather than for any particular performance; and, as a consequence of this, that rewards should not be common, but should be reserved for instances of signal merit. Further, if we are to minimise the evil of giving prominence to an inferior sort of motive, we shall see that, as far as may be, the reward is not definitely aimed at. This is less practicable in the earlier than in the later stages of school life, because it is just in the earlier years that we seek, by the best means at our command, to impel the child with " as strong and decided an initiative as possible " towards the acquisition of good habits. Still, the reward which comes unexpectedly, after persistent efforts on the child's part, is plainly superior as an educative instrument to that which has been overtly worked for. Again, the idea of reward should in general be connected in the child's mind only with what may be called the minor morals of the school. There is no harm in instilling the notion that punctuality, personal neatness, industry, and the careful management of one's possessions, are all things that " pay " throughout life. Grievous harm is done, however, when the idea of reward is associated with the weightier matters of the moral

law. With respect to these, the simple "thou shalt" and "thou shalt not" are sufficient for the child. He must be punished for lying; but he must not be rewarded for telling the truth. He cannot learn too soon or too often that, whether or not "honesty is the best policy," honesty is the only possible course for him. Lastly, it must surely be conceded that the bestowal of a special reward for the possession of superior intellectual gifts is an altogether doubtful proceeding. Such gifts will inevitably bring profit to their fortunate possessor without our interference. When two children, one of superior and the other of inferior natural parts, have both done their best to succeed, it may be questioned whether we do well to cause the latter to make early acquaintance with the rough places of life, by artificially rewarding the former. If this principle were conceded, one of the greatest drawbacks of rewards, that after all they stimulate only the few, would obviously be overcome.

Forms of reward.

In conclusion, let us apply these canons to the different forms of reward most commonly adopted. *Praise* is the readiest and the most delicate instrument at the teacher's disposal, and upon its wise employment his success greatly depends. If he never bestows praise, he sacrifices a valuable asset; and if, at the other extreme, he scatters it broadcast, the ultimate effect is not very different. The word of approbation, wisely and discriminately spoken, has this immense advantage, that even the poor "dunce," or the unfortunate victim of vicious hereditary tendencies, who can never hope to rise to the intellectual or moral heights attained by some of his fellows, may still have his best efforts recognised. Next, we have to consider *material rewards*. When these are small and unexpected, they may act upon young children as an excellent tonic. A new lead-pencil or a story-book will sometimes work wonders with little boys, out of all proportion to the value of the gift. It must be confessed, however, that not inconsiderable moral dangers attend prize-giving in the ordinary sense. All the drawbacks that we have noted as inseparable from rewards in general appear here in their most accentuated form; so much so that in the opinion of some the only satisfactory feature of the annual ceremony of distributing prizes

is that, once in the school year at all events, all the parties concerned in education—parents, governors, teachers, and pupils—meet on common ground. It should be added that scholarships differ essentially from prizes. They are not so much a reward for what has been done, as a provision of the means whereby further progress may be effected, this provision being made in the interests of the community rather than of the individual.

Personal qualities of the good "disciplinarian".

We have now dealt with the chief of those external expedients to which resort may be had in the maintenance of order. If order is heaven's first law, it is certainly also the first law of the school, for without it teaching is impossible, and the personal influence of the finest nature remains unfelt. But it is a patent fact that supervision, commands and rules, rewards and punishments, are instruments whose value varies greatly according to the person who employs them. Who cannot recall some teacher, perhaps a man of noble character and of great eminence in his special branch of learning, whose classroom was generally a bear-garden, and whose intellectual and moral influence, matchless though it might have been if only he could have "maintained discipline,"[1] counted for nothing, at least as regards the average student? The power of facile and perfect control is not easy to explain. Like genius of other sorts, it is a heaven-sent gift which few possess. Very trifling, on the other hand, is the proportion of men and women who entirely lack the power, and these of course should never be teachers. The vast majority possess it in a degree quite sufficient to make them, with some expenditure of patience and trouble, competent "disciplinarians". The young teacher who feels himself weak in this respect is counselled to examine himself with a view to the discovery of the causes of his weakness. As we have said, the secret of a good power of control is not easily explained; still, there are certain points that generally characterise the good disciplinarian. He rarely talks about order; he never asks or begs for order; his easy and confident manner suggests instant

[1] "Discipline" is a word of many meanings. I have generally avoided its use in this book. It is used in the present connection in a commonly accepted sense which will at once be recognised.

obedience; he understands that the eye is a more potent instrument of discipline than the tongue; his speech is clear, direct and incisive; he does not indulge in oddities of dress or demeanour; he deals out even-handed justice, and is not prone to favouritism; he never shows a weak vacillating front, knowing well that there are times when it is almost better to decide wrongly than not to decide at all; he possesses the courage to carry out a policy once justly and sensibly conceived; he is a person of tact, quietly adjusting his measures to the individual pupil's temperament, without any appearance of unequal treatment; he does not go out of his way either to make or to avoid a joke; he knows when to join in a laugh and when to suppress it; he upholds the dignity of his office, neither allowing his pupils to be unduly familiar, nor allowing himself to be cold and distant. These and similar qualities are essential to effective control, and effective control is essential both to successful teaching, and to the play of the teacher's personal influence. To some considerations connected with the latter we now proceed.

REFERENCES

[See end of Chapter XIX]

CHAPTER XVIII

THE INFLUENCE OF THE TEACHER

"It was said of old, *noblesse oblige*, and the thought in its day gave birth to much that was illustrious. We, too, may say to ourselves of the profession we have chosen, *noblesse oblige*. It has its obligations. It warns us off, as with a monarch's voice, from all that is petty, because it is *unprofessional*, because it sets a bad example to the young. How *unprofessional* to lose our tempers! What physician loses his temper with a patient, above all a *child* patient? How *unprofessional* to come up with a lesson half prepared; to be dull or dreamy while we teach; to be sarcastic, or chilling, or unforgiving, or unsympathetic! How *unprofessional* to teach such faults to our pupils, and to give the lie by our deeds and our omissions to half the lessons which issue from our lips!"—Dr. H. M. BUTLER (*Journal of Education*, July, 1884).

Personal influence is in general exerted unconsciously.

BESIDES the conscious training that the teacher gives in the exercise of authority and in the correlative exaction of obedience, he is continually exerting a more or less strong personal influence upon the children committed to his care. Of the exertion of this influence he is usually unaware during school hours, because his attention is necessarily concentrated upon the task of instruction and upon the maintenance of the necessary degree of order. This is a case in which the onlooker sees most of the game. As for the teacher himself, it is only when he comes to reflect upon the day's work, with its inevitable mixture of success and failure, that the silent and unobserved influence of his own personality can rise to clearer consciousness. A little self-criticism of this kind is no doubt a salutary discipline for the young and inexperienced teacher, and the chief purpose of the following remarks is to assist him by drawing attention to certain ways in which his influence must operate for good or ill.

The reader will surmise that the present chapter must amount

to something like an essay on the qualifications of the ideal teacher. This is a sufficiently well-worn theme, for few writers on education have thought their duty done until they have catalogued the long and somewhat disquieting list of the virtues that a teacher ought to possess; and modern educational thought, with its insistence upon the need of studying the child, is disposed rather to increase than to relax the demands made upon the teacher. Its recognition, for example, of the naturalness and healthiness of restless activity on the one side, carries with it the assumption of unlimited patience on the other. The whole question has, in fact, furnished material for a good deal of eloquent magnifying of the teacher's office. It must be confessed, however, that in much of this a note of insincerity, or at least of impracticability, is pretty clearly discernible. That a teacher should be compact of all the virtues, that he should be endlessly patient, unerringly just, imperturbably good-tempered; that he should be a miracle of urbanity and tact, and that he should possess full and accurate knowledge of every subject he is called upon to teach—all this is, of course, devoutly to be wished. It must be borne in mind, however, that the public estimate in which his vocation is held, the emoluments attached to his office, and the fact that very large numbers of his kind are wanted in a civilised country, make it unreasonable to expect that an average teacher should rise above the intellectual level of the average member of other professions. A teacher must be suitably educated and properly trained, but beyond this we have no right to expect more than sound health, moderate intellectual gifts, and freedom from the baser defects of character. A theory of education that proceeds upon any other assumption may be likened to a theory of falling bodies that does not allow for atmospheric resistance; it is true only on certain imaginable conditions. We perhaps need a psychology of the teacher as well as a psychology of the child, for every educational problem is at bottom a case of action and reaction between these two, and the former no less than the latter possesses the usual share of human frailty.

The significance of the teacher's personal influence rests in part upon the child's well-known imitativeness. The immense part played by imitation in the young child's development has already

been referred to, but this point is of special importance in the present connection. We must distinguish between ability to imitate and impulse to imitate. When a child is learning to write, to read, to draw, or to sing, or when a man is learning to play billiards, he attempts, by imitating the model provided by his instructor, to do something which he is as yet unable to do, but which he definitely desires to do. When, however, a child tends to speak and behave like others around him, or when one man's cough sets another coughing, the case is clearly different. He does by imitation something which he is already quite able to do, but which he may by no means desire to do. "It is evident that imitation here consists only in the impulse to follow suit,"[1] the blind impulse to carry out an action which one sees performed by another. Now, so far as the child's education proceeds by way of reproducing the actions of his teacher, it seems clear that intentional imitation is of greatest importance in the sphere of instruction; whereas it is the instinctive impulse to imitate that goes far to explain the power of the teacher's personal influence. This impulse is closely connected with interest. A child ceases to imitate the familiar mewing of the domestic cat, though he is still prone to imitate the less commonplace noises of a menagerie. But—and from our present point of view this is the important matter—"it is not necessary that the act in itself should be interesting; in a most important class of cases the interest centres, not directly in the external act imitated, but in something else with which this act is so intimately connected as virtually to form a part of it. Thus there is a tendency not only to imitate interesting acts, but also the acts of interesting persons. Dogs often imitate their masters. Men are apt to imitate the gestures and modes of speech of those who excite their admiration or affection or some other personal interest. Children imitate their parents, or their leaders in the playground. Even the mannerisms and tricks of a great man are often unconsciously copied by those who regard him as a hero."[2] The application of all this to the teacher's function is plain. To the child, who spends perhaps half a dozen hours a day under his

The child's imitativeness.

[1] Stout, *Manual of Psychology*, p. 270. [2] Stout, *loc. cit.*

care and direction, he is in any case an extremely interesting person, and is at best a " hero ".

It is true that imitation, like other impulses, is a more potent factor of early than of later development. As the small child grows towards boyhood or girlhood, the primitive tendency to do as others do becomes restricted in its range. " At the same time, the mimetic impulse is not rendered inoperative: it is only narrowed and specialised by an intensification of the element of conscious purpose. Thus the boy imitates what he thinks to be fine, as a particular gait or form of speech; what he sees to be useful, *e.g.*, manual dexterities; what his moral and æsthetic sense tells him to be worthy, as brave deeds, and so forth."[1]

The child's " suggestibility ".

Not only the imitativeness of children, but also the kindred fact of their " suggestibility," lends significance to the teacher's influence. We saw in the last chapter how, in the exercise of authority, the tone and manner in which a strong teacher issues his commands may suggest obedience, whereas the half-apologetic tone of his weak-kneed colleague may suggest the precise opposite. The same tendency of a sensory or ideal state to work itself out in a corresponding motor state is illustrated in all personal contact between teacher and pupil. Every powerful teacher is, in fact, something of a mesmerist. The symptoms of the hypnotic trance are to be explained, in part at least, as an extreme form of " that mental susceptibility which we all [not excepting children] possess, of yielding assent to outward suggestion, of affirming what we strongly conceive, and of acting in accordance with what we are made to expect "[2] Here, for example, is an idle or an unintelligent boy, or one who suffers from an absurd degree of diffidence in himself and his own powers. The worst way of dealing with him is openly to call him lazy or stupid, for in this way we distinctly suggest to him the unlikelihood of improvement, and so confirm him in his lack of power. The wiser plan is to try, by words and tones of encouragement, to persuade him that he will be able to understand and to do the thing, and to suspend, at least for a time, his disbelief

[1] Sully, *The Human Mind*, ii., 220.
[2] James, *Principles of Psychology*, vol. ii., p. 598.

in himself. Similarly, we must be on our guard against attributing the worst motives in a case of misconduct. "To assume the existence of vice is often to produce it. We must, therefore, say to the child: You did not really wish to do that; but see how others would interpret your action if they did not know you."[1]

These phenomena of imitation and suggestion, upon which recent psychologists have laid so much stress, affect the child far beyond the limits here discussed, since the teacher forms, after all, only a fraction, albeit an important one, of his entire social environment. The influence of the home was noticed in an earlier chapter, and that of the school society still remains to be dealt with. We here confine ourselves to the function of the teacher as the child's "guide, philosopher and friend". The child's plastic nature makes him an exacting, though an unconscious, taskmaster. Let us mark in somewhat greater detail the ways in which a young teacher who takes his work seriously is likely to feel this. There are certain of his own characteristics which he cannot help to some extent communicating, by ways which we have illustrated, to the children in his class.

Specific ways in which the teacher influences the pupil.

In the first place, a young teacher should remember that he will influence his pupils by the degree of respect which he himself shows for the rules of the school. Just as children are quick to imitate a monotonous drawl in his reading, or a slovenly style of writing, or a loud and strident tone of voice, so they will not be slow to follow a bad example in matters of conduct. The teacher who is frequently unpunctual, or who treats books and other school appliances in careless ways, must not be surprised to find his pupils speedily following suit. If, again, he breaks a rule of the school by clandestinely administering corporal punishment, when the right of employing that means is vested solely in the head-master, he not only forfeits the respect due to himself, but he also indirectly suggests and evokes the law-breaking frame of mind.

(1) Respect for school rules.

Next, the school can do much—for the less fortunate children

[1] Guyau, *Education and Heredity*, p. 28.

it must do all that is ever done—to cultivate the amenities and courtesies of social intercourse. The full significance of this point is seen only when one reflects that good manners are but the external manifestation of some of the noblest attributes of character—self-control, and respect for the feelings and opinions of others. And here the example of the teacher counts for more than commands and insistences, rewards and punishments, all rolled together. The fact that he is placed in a position of authority, and that he is therefore compelled at times to assume a magisterial tone, need not blind him to the other aspect of his relations with his pupils. When firmness passes over into loud self-assertion, good-humoured banter into waspish sarcasm, and candour into rudeness, the teacher is sadly misusing one of his finest opportunities. This, which is true under all circumstances, is a thousand times true when the school happens to be a "mixed" one. For the desirability, nay the possibility, of the co-education of the sexes, depends upon its tendency to call forth gentleness and considerateness on the one side, and courtesy and propriety on the other; and these best fruits of the system cannot be obtained unless the master keep strict watch upon himself as well as upon the scholars.

(2) Politeness.

The caution we have entered against sneers and ill-natured sarcasm need not, of course, be strained so as to exclude the milder forms of irony. How far he may go in this direction is a question that the teacher should on the whole submit to the same tests as those which he would apply to ordinary intercourse between equals. Politeness is still the same quality, whether exhibited in the classroom or in the teacher's common-room; and conformity with the manners of decent society is certainly not less desirable in the one than in the other. A young teacher who is tempted to make jokes at the expense of his pupils might do worse than ask himself whether he would make similar jokes at the expense of a colleague or a friend.

To exemplify the ways in which a worried teacher may on occasion be tempted to treat his pupils impolitely would be an ungrateful task. To make a butt of a dull lad, to refer even indirectly to a personal defect or peculiarity, or to speak slightingly

of a child's home or parents as the probable causes of his ill-behaviour, are among the worst instances that are likely to happen.

Closely related to the point just discussed is the question of the teacher's self-control. He who would govern others aright must begin by governing himself. Petulance, irritability, and all that follows in the train of a hasty, ill-regulated temper, are a bad enough possession for any man, but to a teacher they are a life-long curse. Sometimes their cause lies in chronic ill-health, and sometimes in a real dislike of children, and impatience with their troublesomeness, even in its most innocuous forms. Of such extreme cases there seems only one thing to be said—that the man has missed his way in life. Well might Dr. Channing exclaim that "a boy compelled for six hours a day to see the countenance and hear the voice of a fretful, unkind, hard, or passionate man is placed in a school of vice".[1] Our practical concern, however, is with the common and, indeed, inevitable case of undue susceptibility to pin-pricks. Without seeking to set up any impossible standard, we may say that as soon as one clearly realises one's fault, and understands how one's whole position as an educator may thereby be undermined, the battle is half won. The young teacher who is conscious of weakness in this respect may be counselled to cultivate broad common-sense views of his work, to endeavour to foresee and to provide against the numberless difficulties that are sure to arise in the day's task, to make a private diagnosis of the troublesome pupil, with the object of employing the right kind of treatment, and above all to learn that the plaguy ways of the schoolboy, when they do not amount to positive vice, have their humorous as well as their annoying side. He may remember, too, that his more mischievous pupils are probably the best index of the effectiveness of his teaching. Only the boy who cannot help behaving well will bear bad teaching without even a secret murmur. "The most pitiful sight in the world," wrote Thring, "is the slow, good boy, laboriously kneading himself into stupidity because he is good."

(3) Self-control.

The whole attitude of the teacher towards the work of instruction

[1] See *Remarks on Education* in his collected works.

cannot fail to be reflected in that of the pupils. An earnest and enthusiastic teacher is continually, though unconsciously, suggesting to his pupils that the pursuit of knowledge is in itself a noble thing, worthy of their best endeavours; whereas the teacher who discharges his duties grudgingly and perfunctorily, making it his prime object to get through the day somehow, will infallibly communicate this spirit to his class. The degree in which he throws himself into his work will depend, except so far as temperament decides the question, upon his grasp of its meaning, and his faith in its final upshot. Earnestness of purpose is not, of course, enough in itself to make a good teacher, any more than it is enough to make a good practitioner of any other art; but one may safely say that the want of it does more harm in the teaching profession than in any other, because the stamp of perfunctoriness tends to be impressed upon the very material upon which the teacher works.

(4) Earnestness.

One important way in which the teacher's earnestness will manifest itself is his desire for self-culture. We pass by without comment the plain requirement that one should be competently acquainted with every subject he teaches, though it is to be feared that, so varied are the demands made upon teachers, especially in small schools, many are to be found in the position of that candid teacher of physiology who confessed himself simply "a bone ahead" of his pupils. But apart from this, the man who abruptly discontinues his studies when he leaves college, and, whether through natural inaccessibility to ideas, or through the unfair demands made by school authorities upon his time and energies, ceases thereafter to be a student, is not likely to exert a healthy intellectual influence upon boys. For one thing, he who continues year after year doling out the same old material in the same old ways, though these may be very good, will soon begin to fail in freshness and vitality, even if he do not fall entirely behind the times. And it is quite a mistake to suppose that this principle applies only to the work of teachers of upper forms and college classes. For the teacher of young children, even supposing that he possesses enough actual knowledge of his subjects to last him through his professional life,

(5) Intellectual activity.

must bear in mind that the delicate problems of constructing curricula and devising methods present even greater difficulties in the earlier than in the later stages of instruction. The work of Prof. Dewey at Chicago, and of Prof. Rein at Jena, is perhaps sufficient evidence of this. But, quite apart from those studies which have a direct bearing upon his school work, there remains to be noted the equally important, though indirect, bearing of a teacher's general intellectual interests. A man who ceases to be a learner soon ceases to be the best kind of teacher. He gets out of sympathy with the learner's attitude of mind, and he is specially liable to that intellectual arrogance which has often been attributed, not without reason, to those who spend their whole lives in contact with young and immature minds.[1] The remedy for this lies in spending at least a small part of his life with those who are his masters.

We have noted some of the specific ways in which the moral influence of the teacher acts directly upon the pupil by means of example and suggestion. It is obvious, however, that these are merely typical, and that the total character of the teacher inevitably tells its tale in the general results of his personal intercourse with his boys. Hence the wisdom of the observation that the maxim, "As is the teacher so is the school," should be supplemented by the further maxim, "As is the man, so is the teacher". Though, therefore, we have expressly disclaimed the idea that teachers as a class should be expected or assumed to possess any commanding moral superiority over other classes of men and women, yet a young teacher, for his own sake, no less than for the sake of his scholars, ought to face the plain facts of his position. It is not a mere flight of rhetoric to say that in no place more than in the schoolroom can a private citizen promote the

[1] "Why," asks Charles Lamb, "are we never quite at our ease in the presence of a schoolmaster? Because we are conscious that he is not quite at his ease in ours. He is awkward, and out of place in the society of his equals. He comes like Gulliver from among his little people, and he cannot fit the stature of his understanding to yours. He cannot meet you on the square. He wants a point given him, like an indifferent whist player. He is so used to teaching that he wants to be teaching *you*." (Essay on "The Old and the New Schoolmaster".)

well-being of society by the uprightness and purity of his life, the refinement of his tastes, and the loftiness of his aims. For he impresses himself upon very plastic material; and, more than this, in his case it is true in no ordinary sense that when the time comes for him to rest from his labours, his works follow him.

REFERENCES

[See end of next Chapter.]

MESTON TRAINING COLLEGE MADRAS.

MESTON TRAINING COLLEGE
MADRAS.

CHAPTER XIX

THE SCHOOL SOCIETY AND ITS INFLUENCE

"Iron sharpeneth iron; so a man sharpeneth the countenance of his friend."

The "sympathy of numbers".

UP to this point, we have, by a convenient abstraction, regarded the problem of training chiefly from the individual standpoint. Though it has been impossible to leave entirely out of sight the schoolboy's position as a member of a society, presenting in many of its features a close parallel to the bigger world outside, yet most of what we have said is equally applicable to the private tuition of a single child. Such an order of exposition has the advantage of bringing into clear relief the fact that children are not all alike, that differences of age and temperament require differences of treatment, and that every child's individuality should be cared for and respected. But we must now go on to an explicit consideration of the chief points which arise out of the circumstance that in the school numbers of children are brought together in order to be educated, and that a social factor therefore enters into the question. In the old days, when the individual plan of instruction was in vogue, each child being separately called up to the teacher's desk for instruction, any advantages that arose from the presence of numbers were of course partly sacrificed. Those advantages, so far at least as they affect primary education, were early seen and insisted upon by the Scottish educator, David Stow, whose plea for the adequate recognition of the "sympathy of numbers," though it would not entirely commend itself to a teacher of the present day, yet contains some acute observations.[1] He points out that there is "a power in numbers not experienced in individual teaching or training," and further, that this power makes the school a better place of education than the home. "There is an intellectual and moral

[1] See *The Training System*, chap. xii.

sympathy," says he, "that children feel with those of the same age, which is not felt by the members of a single family. Other sympathies are indeed experienced in the family, which no school can possibly furnish; yet intellectually, and even morally, the school is a necessary and powerful auxiliary. In a family, the boy at twelve sympathises not with his brother at nine, and still less with his sister at seven or eight; he naturally chooses for his companions, at any game or for any pursuit, whether innocent or mischievous, those about his own age, and makes the choice from *sympathy.*"

The social factor in mental development.

Psychology recognises that the mental development of an individual cannot be understood apart from the society in which he lives. To some extent, for instance, each of us thinks, feels, and acts as he does because he is of a certain nationality, and has thus come into possession of common traditions, and above all of a common language. Again, in a civilised country society splits itself, by divisions and cross-divisions, into those groups known as social institutions; and a man is what he is partly through the influence of domestic, industrial, civic, and political organisations. Now what is true of the influence of society at large, during the whole of human life, is true of the influence of the school society during the juvenile period. The corporate life of the school helps to place upon the boy or girl the mark or stamp that we call character. Of course there are other influences concurrently at work, and as these may be better or worse than that of the school, the total effect may be one of discord or of harmony. Like the adult, the child "has as many social selves as there are distinct groups of persons about whose opinion he cares. He generally shows a different side of himself to each of these different groups. Many a youth who is demure enough before his parents and teachers swears and swaggers like a pirate among his 'tough' young friends."[1] But with these discords we are here not specially concerned, since our main interest lies in the moral health of that social self which develops in connection with school life.

The characteristics of such organised groups of individuals as

[1] James, *Principles of Psychology*, vol. i., p. 294.

those mentioned above have recently received some attention under the appellation, "The Psychology of Crowds".[1] There can, of course, be no psychology of a mere accidental agglomeration of persons; but when the thoughts and feelings of a crowd are turned in a definite direction the minds of the individuals composing it are to some extent merged in a "collective mind," which thereupon becomes a promising subject of investigation. Street mobs, juries, meetings, sects, castes, and classes are all examples of the "psychological crowd". So also is a school or a form; and a brief statement of the general features of crowds whose members are adults will perhaps throw some light on the common life of the school. If, at a political meeting, say, one mentally disengages himself from the crowd, and adopts the attitude of the cold onlooker, he is struck by certain marked characteristics. The crowd is impulsive, irritable, credulous, intolerant, and readily susceptible to suggestion. Its morality may, according to the suggestions under which it acts, be much lower or much higher than that of the individuals composing it. It is not much influenced by reasoning, and is soon bored by a close argument; it is easily led to generalise from a particular case, and it manifests little trace of the critical spirit. On the other hand, it is strongly imaginative; so much so that we speak familiarly of the "popular imagination". No one appreciates this fact more keenly than the modern advertiser. When, too, Mark Antony bends the Roman populace to his will, he does so, not by presenting a clear logical statement of his case, but by a succession of vivid and startling images, helped out by the exhibition of "this mantle," and of those "poor, poor dumb mouths," which speak for him with immediate and thrilling effect. Another marked characteristic of a crowd is its quasi-instinctive need of a strong leader. To a weak leader it is inclined to show little mercy, whereas one who possesses organising capacity and strength of will may dare much in the way of despotism. Starting with the power of prestige, he needs only to affirm his opinions with sufficient boldness and to repeat them with

The "psychology of the crowd".

[1] See M. le Bon's *Psychologie de la foule* (Eng. trans.), to which I am indebted at this point.

sufficient persistence, and then the most rudimentary forms of reasoning will usually suffice. The suggestibility of the crowd is limited only by a few fixed and permanent beliefs, such as belief in a religion or in a political ideal.

Its application to the school.

The field thus marked out is a comparatively unworked one,[1] and we must be cautious in accepting and applying such results as those just indicated. Still the general position seems clear. A school is a sort of crowd, in the sense in which the term is here used, and a child who forms one of its members is a widely different person from the same child in his home or under the supervision of a tutor. Even when we are dealing with him as an individual, he is, as we saw in the preceding chapter, largely under the sway of suggestion and imitation; but when we are dealing with him as a schoolboy these impulses are greatly intensified. And so the personal influence of the teacher becomes, for better or worse, far stronger in some respects when he has several pupils to manage than when he has only one or two. It has been well observed that "while a sentiment, or precept, or exhortation addressed to one individual may have small effect, the force of it increases in geometrical ratio as the number of those addressed increases. Hence it is that, while any one accustomed to the management of one child or two will contemplate with alarm the management of a numerous class, he finds himself after a little experience quite relieved of his fears. As a matter of fact, a class of twenty-five is more easily managed and taught (by one who has been trained in class-manipulation) than a class of one or two. No task in the teacher's profession is so hard as that of the private tutor or governess."[2] It ought probably to be added, however, that the "precept or exhortation" should be addressed to the imagination rather than to the discursive faculty; and that, so far as instruction is concerned, the principle here laid down applies rather to those studies in which the senses and imagination are exercised than to those which

[1] But for recent work see McDougall, *The Group Mind.*

[2] Laurie, *Institutes of Education*, p. 406.

involve abstract reasoning; to history, for example, rather than to mathematics.

The influence of prominent pupils.

But the teacher, though his authority and influence should be paramount, and should permeate the whole life of the school, is not the only leader in the school society. Various causes, such as age, status, intellectual ability, or perhaps athletic prowess, operate to distinguish certain pupils from their fellows. And when with the prestige thus acquired a pupil happens to combine the qualities of a strong personality—decisiveness, self-assertiveness, and the like—he, too, becomes a leader whose influence, if it be on the right side, makes him the teacher's powerful and valuable ally, and if it be on the wrong side, makes him a moral storm-centre. It is in dealing with characters such as these that the strength or weakness of the teacher's own personality tells so heavily, for when once such pupils are led to espouse the side of law and order, the battle of discipline is half won. There is a sense, indeed, in which the influence of the stronger natures among the pupils is even more potent than that of any master can be, because an older or bigger boy not only wields the authority which superior age and size confer upon him, but he also stands in a relation of close sympathy with the younger pupils, since he, too, is, after all, a boy, with boyish interests and instincts. His influence depends entirely upon his own personal qualities, whereas that of the teacher necessarily rests in part upon constitutional rights. It is sometimes said that the ideal relation between master and pupil is that in which the former is regarded by the latter as a big boy, with perhaps a dash of the elder brother. There is much truth in this, but certainly not the whole truth, for along with the bond of sympathy there must always be present the idea of lawfully constituted authority on the one side, and of due submission on the other.

This influence most marked in boarding schools.

The influence of prominent individual pupils, though great in all schools, is obviously greatest in boarding schools. It was in his clear recognition of the inevitableness of this principle, and in his belief that it might, by wise regulation, be made a

powerful means of moral training, that one of the most characteristic features of Thomas Arnold's educational work consisted. Whether the system of extensive self-government which he did so much to develop in the great boarding schools, with its heavy demands upon the time and attention of prefects, is destined to survive, amid the keener intellectual competition of later times, appears to be doubtful.[1] Still, the essential principle embodied in the system is one from which there can be no escape. Arnold's recognition of the individual scholar as a greater force for good or evil in a boarding than in a day school is seen, too, in his insistence upon the right to remove boys "who were clearly incapable of deriving good from the system, or whose influence on others was decidedly and extensively pernicious".

Esprit de corps.

It was pointed out above that the susceptibility of "crowds" to the influence of strong leaders, and the consequent variability of beliefs and opinions, is limited by the powerful hold which certain beliefs have obtained upon men's minds. In the history of nations, such relatively fixed and permanent factors are to be found in religious, political, and social ideals; as, for example, the democratic ideal in the United States. Not only, however, on the large scale, but also in the smaller groups into which a community divides itself, conservative tendencies are always to be found at work. Codes of professional etiquette are well-known instances in point. Now what is true of adult social groups we find again to be true of the school. Besides the influence of individual scholars to which reference has been made, we have to reckon with the influence of the school as a whole—the force of its traditions, the power of its public opinion and its settled usages—in short its common spirit or *esprit de corps*. This spirit exists in its intensest form in boarding rather than in day schools, in old schools rather than in those of recent foundation, in those in which school life is prolonged till the eighteenth or nineteenth year rather than in those where it is cut short some years earlier, in schools whose pupils are destined to enjoy superior opportunities of

[1] See Cookson's *Essays on Secondary Education*, p. 61

distinction rather than in schools for the less privileged classes. Nevertheless the corporate feeling of a school, the state of schoolboy opinion upon such matters as lying, "cribbing," tale-bearing, and sneaking, and the general estimate of what constitutes "good form," are under all circumstances forces to be reckoned with. If the tone of a school be thoroughly healthy, the sympathies of a well-disposed newcomer will at once be won to the right side; and the ill-disposed must needs conform to some extent with the established order of things, even though his assent be tardy and half-hearted. If the tone be unhealthy, the task of reform cannot prove a light one, until indeed the current begins to turn in the right direction. "And if, as on a watershed, the stream should hesitate as to the direction in which it is to flow, the will and purpose of the master may easily determine its final course. By his own character, by his own conduct, his own earnestness, and his own example, he will always point the way. The boys will learn that it is 'good form' to be good."[1]

The principle of social contrast no less important than that of social imitation.

Thus far we have dealt with the influence of the school society upon the individual pupil as a special instance of the working of the principles of imitation and suggestion. Children and youths tend to imitate their companions, and in particular those of their fellows who for any reason have become prominent. But there is another aspect of this influence to be noted. For, as Prof. Royce says, "side by side with the social processes of the imitative type appear another group of reactions practically inseparable from the former, but in character decidedly contrasted with them. These are the phenomena of social opposition and of the love for contrasting one's self with one's fellows in behaviour, in opinion, or in power. The phenomena of social contrast and opposition have an unquestionably instinctive basis. They appear very early in childhood. They last in most people throughout life. They may take extremely hostile and formidable shapes. In their normal expression they constitute one of the most valuable features of

[1] Laurie, *Institutes of Education*, lect. xv.

any healthy social activity. This fact may be illustrated by any lively conversation or discussion."[1] In a word, social imitation always goes along with social opposition and contrast. The two impulses are, however, closely related, since they are both connected with the desire not to be inferior to others.

How the principle of opposition works in the sphere of instruction we have partly seen in our discussion of rewards. It takes the form of open rivalry, which need by no means, however, be of the spiteful and ungenerous sort. To institute hot contests for rewards, or to make school life an incessant struggle for places, is no doubt to stimulate the love of opposition in artificial and hurtful ways. Still, competition has its place and its value. It cannot, of course, even in its milder forms, evoke a love of learning; but it may help to beget a useful habit of learning, which is in many cases a not unimportant preliminary to genuine interest. To say that "the moment emulation passes into personal competition it verges on the immoral,"[2] is to ignore one of the most patent facts of human nature. We have to deal with boys and girls, not as we would like them to be, but as we actually find them; and, as an obvious matter of fact, competition spurs on to intenser effort not only children, but many men and women whose aims can hardly be called ignoble. Personal competition need not be malevolent and greedy competition. That which gives all their zest and relish to the pursuits of the playing fields, that which imparts its flavour to social intercourse, and which often encourages the man of science to "scorn delights and live laborious days," can hardly be so alien to the proper spirit of the schoolroom. The instinctive love of opposition is there, not to be ignored or repressed, but to be moulded to the finest issues.[3]

It remains to be noted that not only in the assembled school or class, and in the organised games, is the child's mental development furthered by social imitation and opposition, but also in all the miscellaneous relations into which the pupils are

[1] *Outlines of Psychology*, p. 277.
[2] Laurie, *op. cit.*, p. 413.
[3] See also James, *Talks to Teachers*, pp. 49-53.

brought. As in the college or the place of business, the play of social influences extends the knowledge, widens the sympathies, and sharpens the wits of the adult, in ways so commonly unobserved that even professed psychologists have until recently missed their significance, so do school companionships perform a like function for the child. In their social intercourse at odd times children of about the same age are continually checking one another's use of words; revising one another's ideas; accepting, rejecting, and criticising one another's judgments; and, in the later stages at least, agreeing with or dissenting from one another's inferences. Hence the well-known fact that there is no place like school or college for smoothing down a youth's angularities, and for supplementing in valuable ways the benign though narrowing influence of the home.

Organisation of the school society.

The considerations brought forward in this chapter will, we think, make it abundantly clear that the corporate life of the school will, in any case, play an important part in the individual child's education. It remains to be noted that under wise management the influence of that corporate life may be greatly strengthened and purified. One secret of such management would seem to be that, as the school is carefully organised for purposes of instruction, in ways explained in preceding chapters of this book, so should it be carefully organised for purposes of training. Now it is just in this respect that English schools, provided they live up to their privileges, may be counted fortunate. In the task which lies immediately before our educational authorities, of developing the system of secondary day schools, we rightly look to the schools of the Continent, with their high standards of intellectual efficiency, for hints on the organisation of instruction; but it is equally important that we should look to the great historical schools of our own country, with their distinguished traditions in the direct fashioning of character, for hints on the organisation of the school community. One of the most hopeful tendencies in this direction is to be seen in the successful adaptation of the "house" system to the circumstances of the day school. The pride which each boy takes in his "house,"

and the friendly rivalry in games between the different "houses," have been found to contribute most effectively to the best kind of *esprit de corps*. An immense advantage is gained, too, when the efforts of changing form masters in behalf of a scholar's intellectual progress are supplemented by those of a permanent tutor, whose business it is to interest himself in that part of the boy's school life that lies beyond the class-room,—in his games, his pastimes, and his share in the school societies; and whose business it is also to act as guide and counsellor, especially at critical stages of school life, as, for example, when the fateful period arrives of specialisation in study. Assuming, too, as we may, that the pupil-teachers of the future will commonly be educated in secondary day schools, it seems not too much to hope that some of the best elements in the corporate life of the great secondary schools may eventually permeate, to no insignificant extent, the whole school system of this country.

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S. S. Laurie, in his *Institutes of Education*, part iv., lects., ix.-xv., treats the topics of our last three chapters very suggestively. For expositions of the same subject from the Herbartian standpoint see Herbart's *Science of Education* (Felkin's trans.), book iii.; Felkin's *Introduction to Herbart*, chap. iv., and Rein's *Outlines of Pedagogics*. A. Sidgwick's lecture *On Stimulus* and his chapter on "Form Management" in Barnett's *Teaching and Organisation* are excellent reading for young teachers. See also Barnett's *Common Sense in Teaching*, chap. ii. On the "house" system see Thring's *Education and School;* and Findlay's *Arnold of Rugby, passim.* On suggestion see Keatinge's *Suggestion in Education.*

Recently the question of freedom in the school has received much attention. See the extensive literature connected with the work of Dr. Montessori, of whose teaching this seems the most valuable feature. See also Holmes' *What is and what might be.*

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